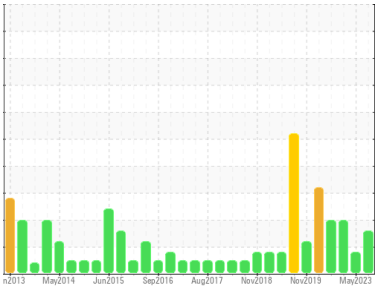
# PROBLEM SUMMARY

Sample Rating Trend

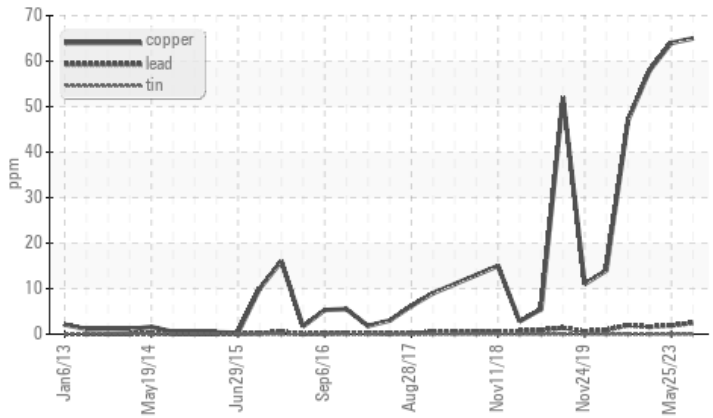


**WEAR**

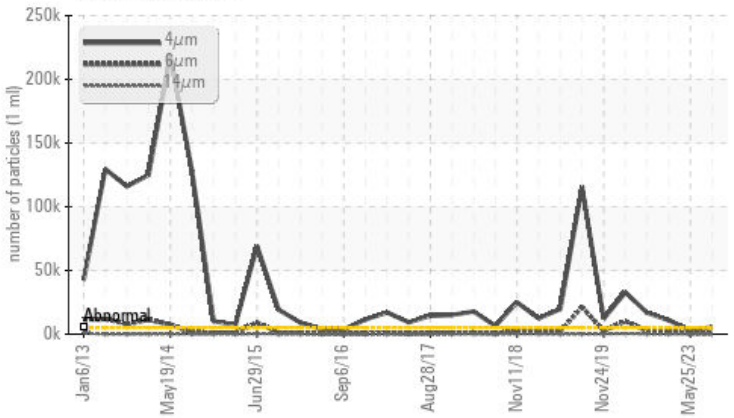
Machine Id
## L2-L4 NDT ENTRY CONV HPU
Component
**Hydraulic System**
Fluid
**FORSYTHE TURBO HYDRAULIC AW 32 (500 LTR)**

## COMPONENT CONDITION SUMMARY

▲ Non-ferrous Metals




▲ Particle Trend




## RECOMMENDATION

We recommend you service the filters on this component. We recommend an early resample to monitor this condition.

## PROBLEMATIC TEST RESULTS

| Sample Status | | | | **ABNORMAL** | ABNORMAL | ABNORMAL |
|---|---|---|---|---|---|---|
| Copper | ppm | ASTM D5185(m) | >20 | ▲ **65** | ▲ 64 | ▲ 58 |
| Particles >4µm | | ASTM D7647 | >5000 | ▲ **5598** | 2820 | ▲ 10945 |
| Oil Cleanliness | | ISO 4406 (c) | >19/17/14 | ▲ **20/17/11** | 19/16/11 | ▲ 21/18/13 |

**Customer Id:** WEL191WEL
**Sample No.:** WC0851646
**Lab Number:** 02577470
**Test Package:** IND 2

*To manage this report scan the QR code*

*To discuss the diagnosis or test data:*
Kevin Marson +1 (289)291-4644 x4644
Kevin.Marson@wearcheck.com

*To change component or sample information:*
Gloria Gonzalez +1 (289)291-4643 x4643
gloria.gonzalez@wearcheck.com

## RECOMMENDED ACTIONS

| Action | Status | Date | Done By | Description |
|---|---|---|---|---|
| Change Filter | --- | --- | ? | We recommend you service the filters on this component. |
| Resample | --- | --- | ? | We recommend an early resample to monitor this condition. |

## HISTORICAL DIAGNOSIS

**25 May 2023 Diag: Kevin Marson**

WEAR

We recommend an early resample to monitor this condition.Copper ppm levels are abnormal. Oil cooler core leaching or motor piston wear is indicated. The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The system and fluid cleanliness is acceptable. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report

**08 Jan 2023 Diag: Kevin Marson**

WEAR

We recommend you service the filters on this component. We recommend an early resample to monitor this condition.Copper ppm levels are abnormal. Oil cooler core leaching or motor piston wear is indicated. Particles >4µm and oil cleanliness are abnormally high. Particles >6µm are notably high. 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

**19 Sep 2022 Diag: Kevin Marson**

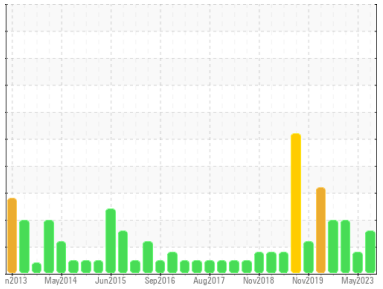
WEAR

We recommend you service the filters on this component. We recommend an early resample to monitor this condition.Copper ppm levels are abnormal. Oil cooler core leaching or motor piston wear is indicated. Particles >4µm and oil cleanliness are abnormally high. Particles >6µm are notably high. 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**

Machine Id
## L2-L4 NDT ENTRY CONV HPU
Component
### Hydraulic System
Fluid
### FORSYTHE TURBO HYDRAULIC AW 32 (500 LTR)

## DIAGNOSIS

**Recommendation**

We recommend you service the filters on this component. We recommend an early resample to monitor this condition.

**Wear**

Copper ppm levels are abnormal. Oil cooler core leaching or motor piston wear is indicated.

**Contamination**

There is a light 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 | | **WC0851646** | WC0822504 | WC0777246 |
| Sample Date | | Client Info | | **21 Aug 2023** | 25 May 2023 | 08 Jan 2023 |
| Machine Age | hrs | Client Info | | **0** | 0 | 0 |
| Oil Age | hrs | Client Info | | **0** | 0 | 0 |
| Oil Changed | | Client Info | | **N/A** | N/A | N/A |
| Sample Status | | | | **ABNORMAL** | ABNORMAL | ABNORMAL |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185(m) | >20 | **4** | 5 | 4 |
| Chromium | ppm | ASTM D5185(m) | >20 | **<1** | <1 | 0 |
| Nickel | ppm | ASTM D5185(m) | >20 | **0** | 0 | 0 |
| Titanium | ppm | ASTM D5185(m) | | **0** | 0 | 0 |
| Silver | ppm | ASTM D5185(m) | | **0** | 0 | 0 |
| Aluminum | ppm | ASTM D5185(m) | >20 | **0** | <1 | 0 |
| Lead | ppm | ASTM D5185(m) | >20 | **2** | 2 | 2 |
| Copper | ppm | ASTM D5185(m) | >20 | ▲ **65** | ▲ 64 | ▲ 58 |
| Tin | ppm | ASTM D5185(m) | >20 | **0** | 0 | 0 |
| Antimony | ppm | ASTM D5185(m) | | **0** | 0 | <1 |
| Vanadium | ppm | ASTM D5185(m) | | **0** | 0 | 0 |
| Beryllium | ppm | ASTM D5185(m) | | **0** | 0 | 0 |
| Cadmium | ppm | ASTM D5185(m) | | **0** | 0 | 0 |

| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185(m) | | **2** | 4 | 2 |
| Barium | ppm | ASTM D5185(m) | | **0** | 0 | 0 |
| Molybdenum | ppm | ASTM D5185(m) | | **4** | 4 | 4 |
| Manganese | ppm | ASTM D5185(m) | | **0** | 0 | 0 |
| Magnesium | ppm | ASTM D5185(m) | | **8** | 9 | 9 |
| Calcium | ppm | ASTM D5185(m) | | **63** | 68 | 68 |
| Phosphorus | ppm | ASTM D5185(m) | | **403** | 455 | 418 |
| Zinc | ppm | ASTM D5185(m) | | **415** | 427 | 426 |
| Sulfur | ppm | ASTM D5185(m) | | **1556** | 1729 | 1683 |
| Lithium | ppm | ASTM D5185(m) | | **<1** | <1 | <1 |

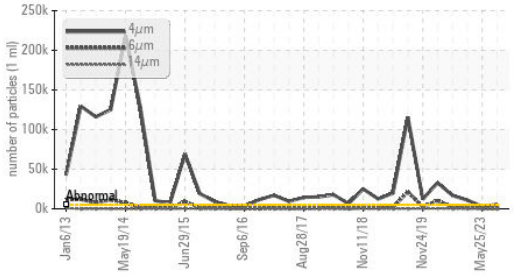
| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185(m) | >15 | **<1** | <1 | <1 |
| Sodium | ppm | ASTM D5185(m) | | **1** | 2 | 2 |
| Potassium | ppm | ASTM D5185(m) | >20 | **<1** | <1 | 0 |

| FLUID CLEANLINESS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Particles >4µm | | ASTM D7647 | >5000 | ▲ **5598** | 2820 | ▲ 10945 |
| Particles >6µm | | ASTM D7647 | >1300 | **663** | 528 | ▲ 2324 |
| Particles >14µm | | ASTM D7647 | >160 | **16** | 17 | 76 |
| Particles >21µm | | ASTM D7647 | >40 | **3** | 2 | 18 |
| Particles >38µm | | ASTM D7647 | >10 | **0** | 0 | 2 |
| Particles >71µm | | ASTM D7647 | >3 | **0** | 0 | 0 |
| Oil Cleanliness | | ISO 4406 (c) | >19/17/14 | ▲ **20/17/11** | 19/16/11 | ▲ 21/18/13 |

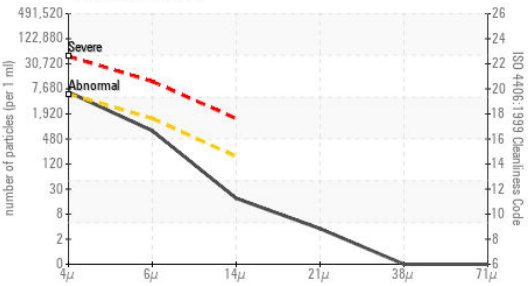
| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Acid Number (AN) | mg KOH/g | ASTM D974* | | **0.54** | 0.60 | 0.59 |

# OIL ANALYSIS REPORT

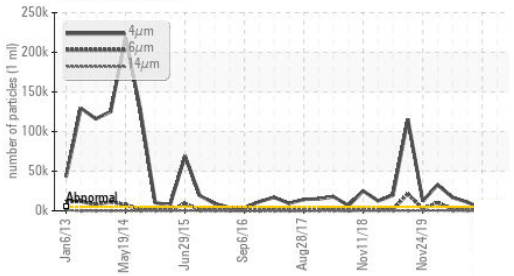
Particle Trend



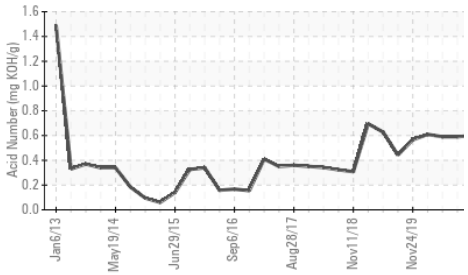

Particle Count



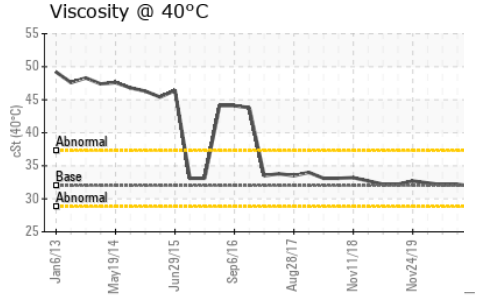

Particle Trend




Acid Number



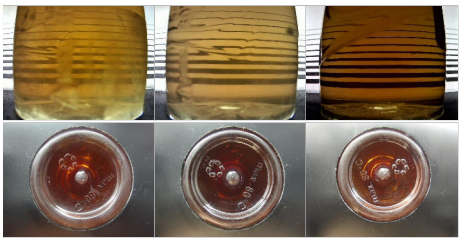

Viscosity @ 40°C




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

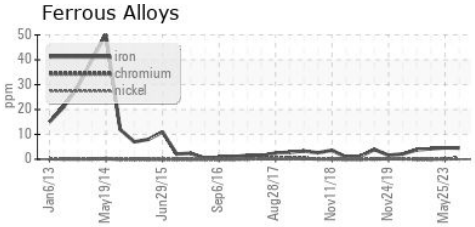
| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 40°C | cSt | ASTM D7279(m) | 32 | **32.2** | 31.9 | 32.2 |

| SAMPLE IMAGES | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|
| Color | | | | | |
| Bottom | | | | | |

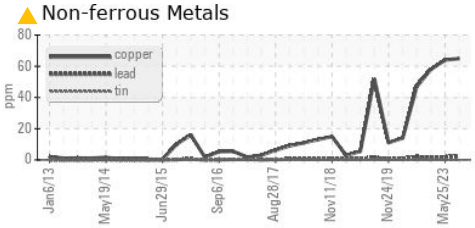


## GRAPHS

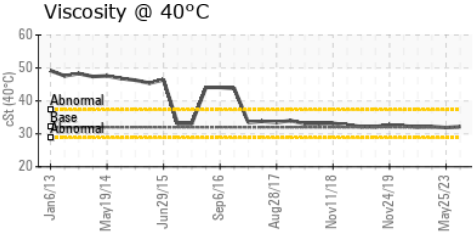
Ferrous Alloys



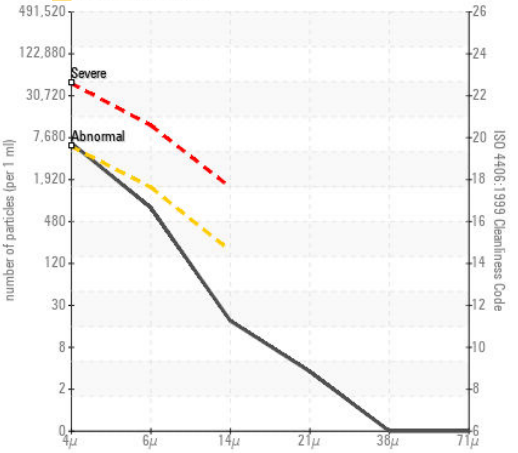

Non-ferrous Metals



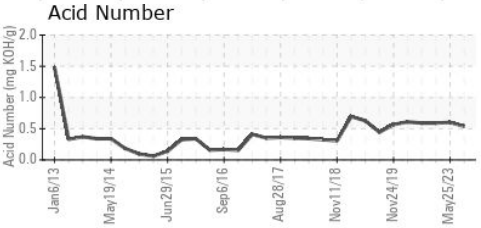

Viscosity @ 40°C




Particle Count




Acid Number




ISO 17025:2017 Accredited Laboratory

**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
**Sample No.** : WC0851646 **Received** : 22 Aug 2023
**Lab Number** : 02577470 **Diagnosed** : 23 Aug 2023
**Unique Number** : 5630530 **Diagnostician** : Kevin Marson
**Test Package** : IND 2

*To discuss this sample report, contact Customer Service at 1-800-268-2131.*
*Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab.*
*Validity of results and interpretation are based on the sample and information as supplied.*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