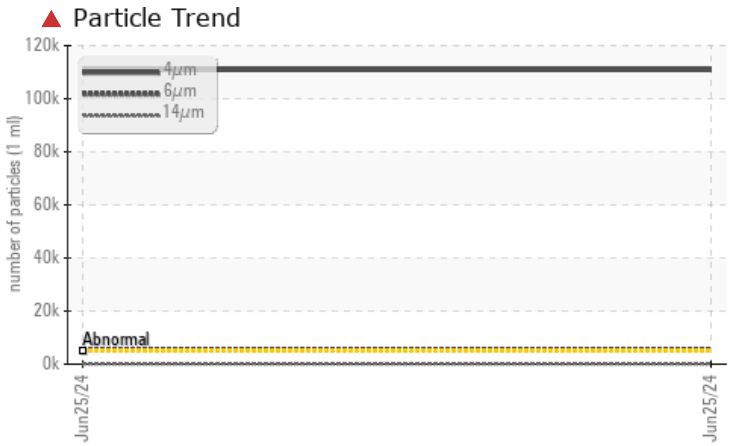
# PROBLEM SUMMARY

Sample Rating Trend


ISO

Area
**[212564]**
Machine Id
**MAREN MANUAL TIE PAPERWORKS IND B**
Component
**Hydraulic System**
Fluid
**AW HYDRAULIC OIL ISO 68 (--- GAL)**

## COMPONENT CONDITION SUMMARY




## RECOMMENDATION

Check seals and/or filters for points of contaminant entry. The air breather requires service. If unrated, we recommend that you replace with a suitable micron rated and/or desiccant air breather. If rated, we recommend that you service/replace the breather. We recommend you service the filters on this component. Resample in 30-45 days to monitor this situation. The fluid was not specified, however, a fluid match indicates that this fluid is (GENERIC) AW HYDRAULIC OIL ISO 68. Please confirm.
NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.

## PROBLEMATIC TEST RESULTS

| | | | | | | |
|---|---|---|---|---|---|---|
| Sample Status | | | | **SEVERE** | --- | --- |
| Particles >4µm | | ASTM D7647 | >5000 | ▲ **110872** | --- | --- |
| Particles >6µm | | ASTM D7647 | >1300 | ▲ **5414** | --- | --- |
| Oil Cleanliness | | ISO 4406 (c) | >19/17/14 | ▲ **24/20/14** | --- | --- |

**Customer Id:** ADVFRA
**Sample No.:** WC0911548
**Lab Number:** 06221155
**Test Package:** IND 2

*To manage this report scan the QR code*

*To discuss the diagnosis or test data:*
Wes Davis +1 905-569-8600 x223
wesd@wearcheck.ca

*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. |
| Resample | --- | --- | ? | Resample in 30-45 days to monitor this situation. |
| Alert | --- | --- | ? | The fluid was not specified, however, a fluid match indicates that this fluid is (GENERIC) AW HYDRAULIC OIL ISO 68. Please confirm. |
| Information Required | --- | --- | ? | NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample. |
| Check Breathers | --- | --- | ? | The air breather requires service. If unrated, we recommend that you replace with a suitable micron rated and/or desiccant air breather. If rated, we recommend that you service/replace the breather. |
| Check Seals | --- | --- | ? | Check seals and/or filters for points of contaminant entry. |

## HISTORICAL DIAGNOSIS

# OIL ANALYSIS REPORT

Sample Rating Trend


ISO

Area
**[212564]**
Machine Id
## MAREN MANUAL TIE PAPERWORKS IND B
Component
**Hydraulic System**
Fluid
**AW HYDRAULIC OIL ISO 68 (--- GAL)**

## DIAGNOSIS

**Recommendation**
Check seals and/or filters for points of contaminant entry. The air breather requires service. If unrated, we recommend that you replace with a suitable micron rated and/or desiccant air breather. If rated, we recommend that you service/replace the breather. We recommend you service the filters on this component. Resample in 30-45 days to monitor this situation. The fluid was not specified, however, a fluid match indicates that this fluid is (GENERIC) AW HYDRAULIC OIL ISO 68. Please confirm.
NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.

**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 oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

| SAMPLE INFORMATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | **WC0911548** | --- | --- |
| Sample Date | | Client Info | | **25 Jun 2024** | --- | --- |
| Machine Age | hrs | Client Info | | **0** | --- | --- |
| Oil Age | hrs | Client Info | | **0** | --- | --- |
| Oil Changed | | Client Info | | **Not Changd** | --- | --- |
| Sample Status | | | | **SEVERE** | --- | --- |

| CONTAMINATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Water | | WC Method | >0.1 | **NEG** | --- | --- |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185m | >20 | **8** | --- | --- |
| Chromium | ppm | ASTM D5185m | >10 | **2** | --- | --- |
| Nickel | ppm | ASTM D5185m | >10 | **0** | --- | --- |
| Titanium | ppm | ASTM D5185m | | **<1** | --- | --- |
| Silver | ppm | ASTM D5185m | | **0** | --- | --- |
| Aluminum | ppm | ASTM D5185m | >10 | **4** | --- | --- |
| Lead | ppm | ASTM D5185m | >10 | **<1** | --- | --- |
| Copper | ppm | ASTM D5185m | >75 | **13** | --- | --- |
| Tin | ppm | ASTM D5185m | >10 | **0** | --- | --- |
| Vanadium | ppm | ASTM D5185m | | **0** | --- | --- |
| Cadmium | ppm | ASTM D5185m | | **0** | --- | --- |

| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185m | 5 | **0** | --- | --- |
| Barium | ppm | ASTM D5185m | 5 | **0** | --- | --- |
| Molybdenum | ppm | ASTM D5185m | 5 | **0** | --- | --- |
| Manganese | ppm | ASTM D5185m | | **<1** | --- | --- |
| Magnesium | ppm | ASTM D5185m | 25 | **0** | --- | --- |
| Calcium | ppm | ASTM D5185m | 200 | **41** | --- | --- |
| Phosphorus | ppm | ASTM D5185m | 300 | **279** | --- | --- |
| Zinc | ppm | ASTM D5185m | 370 | **333** | --- | --- |
| Sulfur | ppm | ASTM D5185m | 2500 | **3214** | --- | --- |

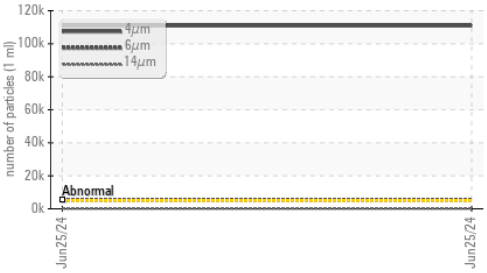
| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | >20 | **6** | --- | --- |
| Sodium | ppm | ASTM D5185m | | **1** | --- | --- |
| Potassium | ppm | ASTM D5185m | >20 | **1** | --- | --- |

| FLUID CLEANLINESS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Particles >4µm | | ASTM D7647 | >5000 | ▲ **110872** | --- | --- |
| Particles >6µm | | ASTM D7647 | >1300 | ▲ **5414** | --- | --- |
| Particles >14µm | | ASTM D7647 | >160 | **136** | --- | --- |
| Particles >21µm | | ASTM D7647 | >40 | **47** | --- | --- |
| Particles >38µm | | ASTM D7647 | >10 | **3** | --- | --- |
| Particles >71µm | | ASTM D7647 | >3 | **0** | --- | --- |
| Oil Cleanliness | | ISO 4406 (c) | >19/17/14 | ▲ **24/20/14** | --- | --- |

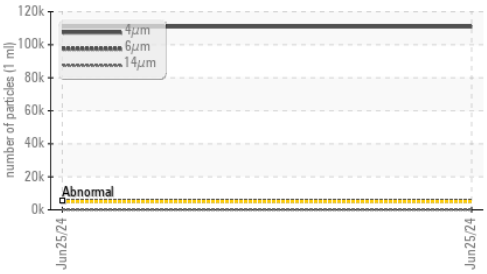
| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Acid Number (AN) | mg KOH/g | ASTM D8045 | 0.57 | **0.33** | --- | --- |

# OIL ANALYSIS REPORT

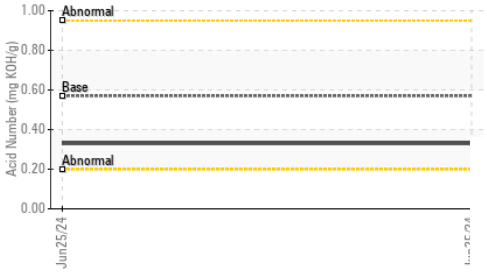
Particle Trend



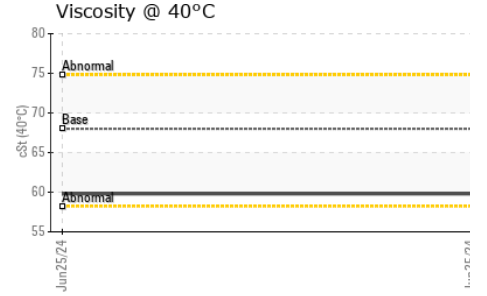

Particle Trend




Acid Number




Viscosity @ 40°C



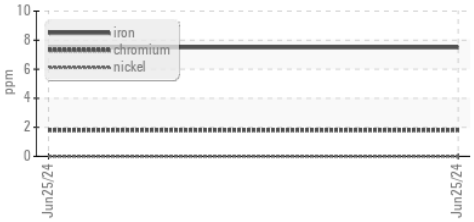

| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | *Visual | NONE | **NONE** | --- | --- |
| Yellow Metal | scalar | *Visual | NONE | **NONE** | --- | --- |
| Precipitate | scalar | *Visual | NONE | **NONE** | --- | --- |
| Silt | scalar | *Visual | NONE | **NONE** | --- | --- |
| Debris | scalar | *Visual | NONE | **NONE** | --- | --- |
| Sand/Dirt | scalar | *Visual | NONE | **NONE** | --- | --- |
| Appearance | scalar | *Visual | NORML | **NORML** | --- | --- |
| Odor | scalar | *Visual | NORML | **NORML** | --- | --- |
| Emulsified Water | scalar | *Visual | >0.1 | **NEG** | --- | --- |
| Free Water | scalar | *Visual | | **NEG** | --- | --- |

| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 40°C | cSt | ASTM D445 | 68 | **59.8** | --- | --- |

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

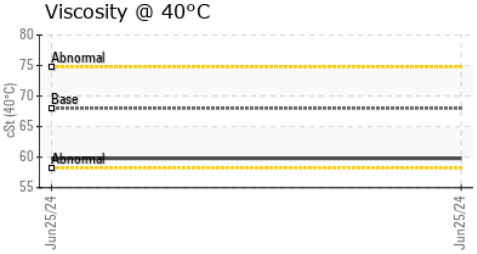
## GRAPHS

Ferrous Alloys

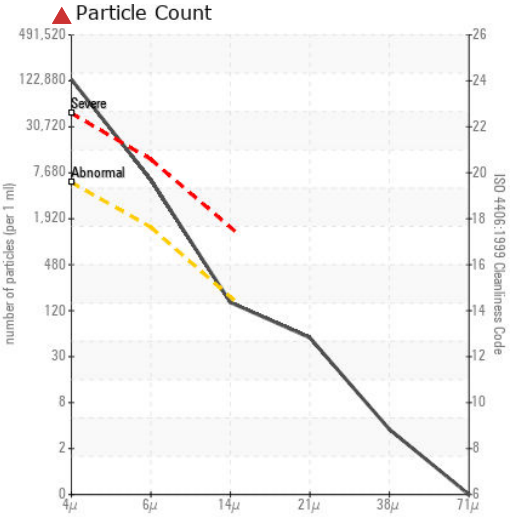



Non-ferrous Metals


Viscosity @ 40°C




Particle Count




Acid Number


Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : WC0911548
**Lab Number** : 06221155
**Unique Number** : 11099352
**Test Package** : IND 2

**Received** : 26 Jun 2024
**Tested** : 27 Jun 2024
**Diagnosed** : 27 Jun 2024 - Wes Davis

*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)*

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