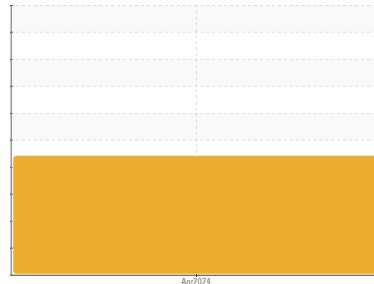




OIL ANALYSIS REPORT

Sample Rating Trend



ISO



Machine Id

WEST

Component

Master Hydraulic System

Fluid

AW HYDRAULIC OIL ISO 68 (--- GAL)

DIAGNOSIS

▲ Recommendation

We advise that you check all areas where contaminants can enter the system. We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid. 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. 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.

Please specify the component make and model with your next sample.

Wear

All component wear rates are normal.

▲ Contamination

There is a high amount of particulates (2 to 100 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 | | | PTK0005609 | --- | --- |
| Sample Date | Client Info | | | 18 Apr 2024 | --- | --- |
| Machine Age | hrs | Client Info | | 0 | --- | --- |
| Oil Age | hrs | Client Info | | 0 | --- | --- |
| Oil Changed | Client Info | | | N/A | --- | --- |
| 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 | <1 | --- | --- |
| Chromium | ppm | ASTM D5185m | >10 | 0 | --- | --- |
| Nickel | ppm | ASTM D5185m | >10 | 0 | --- | --- |
| Titanium | ppm | ASTM D5185m | | 0 | --- | --- |
| Silver | ppm | ASTM D5185m | | 0 | --- | --- |
| Aluminum | ppm | ASTM D5185m | >10 | 0 | --- | --- |
| Lead | ppm | ASTM D5185m | >10 | <1 | --- | --- |
| Copper | ppm | ASTM D5185m | >75 | 2 | --- | --- |
| Tin | ppm | ASTM D5185m | >10 | <1 | --- | --- |
| Vanadium | ppm | ASTM D5185m | | 0 | --- | --- |
| Cadmium | ppm | ASTM D5185m | | 0 | --- | --- |

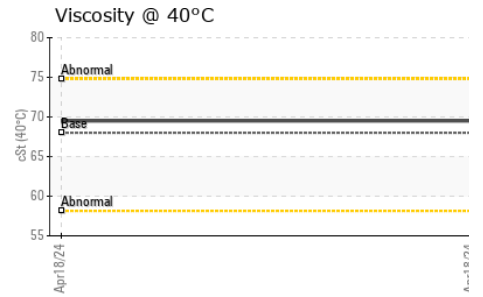
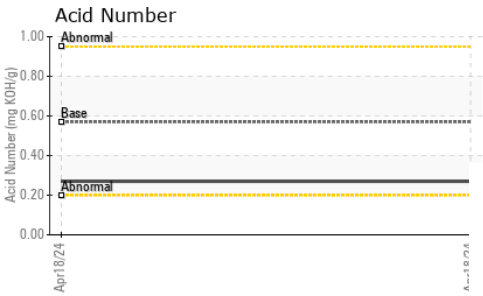
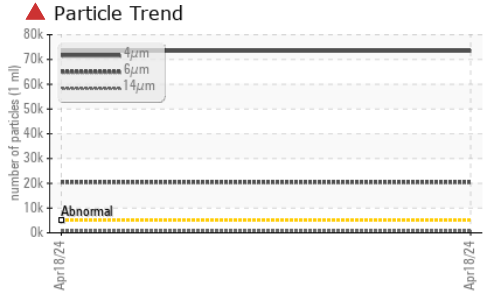
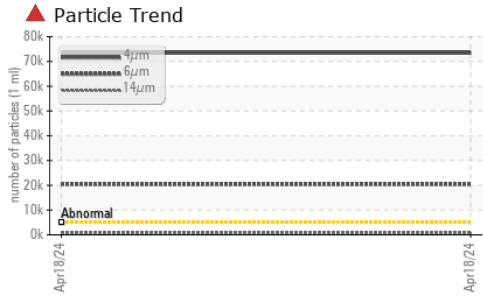
| ADDITIVES | | method | limit/base | current | history1 | history2 |
|------------|-----|-------------|------------|--------------|----------|----------|
| Boron | ppm | ASTM D5185m | 5 | 0 | --- | --- |
| Barium | ppm | ASTM D5185m | 5 | 0 | --- | --- |
| Molybdenum | ppm | ASTM D5185m | 5 | 0 | --- | --- |
| Manganese | ppm | ASTM D5185m | | <1 | --- | --- |
| Magnesium | ppm | ASTM D5185m | 25 | <1 | --- | --- |
| Calcium | ppm | ASTM D5185m | 200 | 57 | --- | --- |
| Phosphorus | ppm | ASTM D5185m | 300 | 365 | --- | --- |
| Zinc | ppm | ASTM D5185m | 370 | 459 | --- | --- |
| Sulfur | ppm | ASTM D5185m | 2500 | 3016 | --- | --- |

| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|--------------|-----|-------------|------------|----------|----------|----------|
| Silicon | ppm | ASTM D5185m | >20 | 1 | --- | --- |
| Sodium | ppm | ASTM D5185m | | 2 | --- | --- |
| Potassium | ppm | ASTM D5185m | >20 | 1 | --- | --- |

| FLUID CLEANLINESS | | method | limit/base | current | history1 | history2 |
|-------------------|--|--------------|------------|-------------------|----------|----------|
| Particles >4µm | | ASTM D7647 | >5000 | ▲ 73415 | --- | --- |
| Particles >6µm | | ASTM D7647 | >1300 | ▲ 20428 | --- | --- |
| Particles >14µm | | ASTM D7647 | >160 | ▲ 764 | --- | --- |
| Particles >21µm | | ASTM D7647 | >40 | ▲ 121 | --- | --- |
| Particles >38µm | | ASTM D7647 | >10 | 2 | --- | --- |
| Particles >71µm | | ASTM D7647 | >3 | 0 | --- | --- |
| Oil Cleanliness | | ISO 4406 (c) | >19/17/14 | ▲ 23/22/17 | --- | --- |

| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|-------------------|----------|------------|------------|-------------|----------|----------|
| Acid Number (AN) | mg KOH/g | ASTM D8045 | 0.57 | 0.27 | --- | --- |

OIL ANALYSIS REPORT



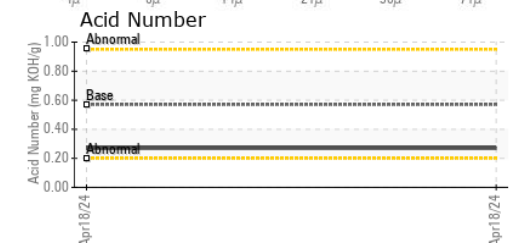
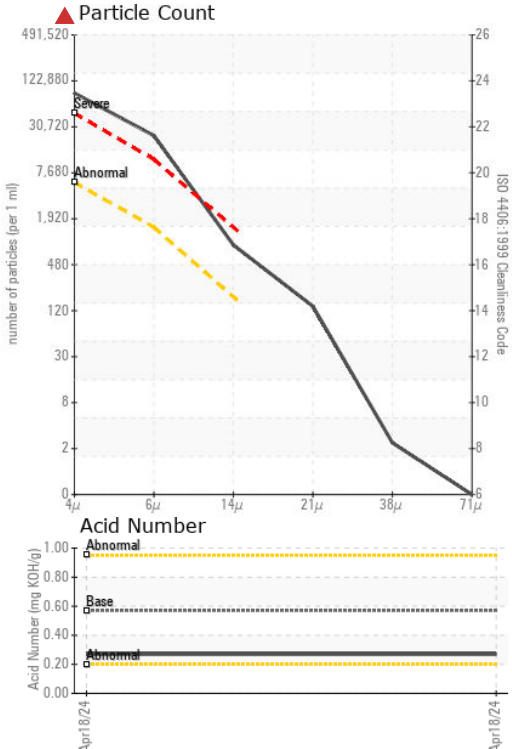
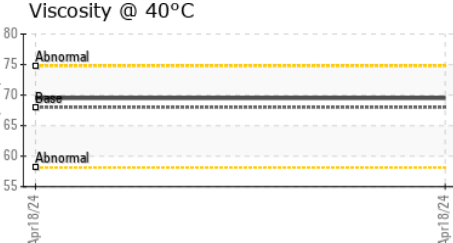
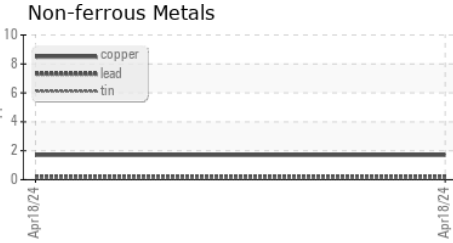
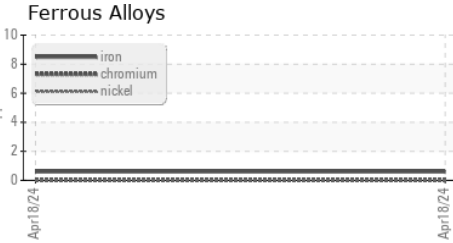
| VISUAL | method | limit/base | current | history1 | history2 |
|------------------|--------|------------|---------|----------|----------|
| White Metal | scalar | *Visual | NONE | NONE | --- |
| Yellow Metal | scalar | *Visual | NONE | NONE | --- |
| Precipitate | scalar | *Visual | NONE | NONE | --- |
| 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 | 69.5 | --- | --- |

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

| | | | |
|--------|--|----------|----------|
| Color | | no image | no image |
| Bottom | | no image | no image |

GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PTK0005609 **Received** : 19 Apr 2024
Lab Number : 06154316 **Tested** : 22 Apr 2024
Unique Number : 10989739 **Diagnosed** : 22 Apr 2024 - Wes Davis
Test Package : MOB 2

MILLERBERND MANUFACTURING
 622 6TH ST S
 WINSTEAD, MN
 US 55395
 Contact: BILL KRAUSE
 bkrause@millerberndmfg.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)