MAR II

WEAR CHECK Inland Marine Oil Analysis Program

# OIL ANALYSIS REPORT

| | |
|---|---|
| WEAR | NORMAL |
| CONTAMINATION | NORMAL |
| FLUID CONDITION | NORMAL |

Machine Id
## JOHN DEERE MAGNOLIA
Component
## Starboard Genset
Fluid
## CHEVRON DELO 400 LE 15W40 (5 GAL)

## RECOMMENDATION

Resample at the next service interval to monitor.

## WEAR

All component wear rates are normal.

## CONTAMINATION

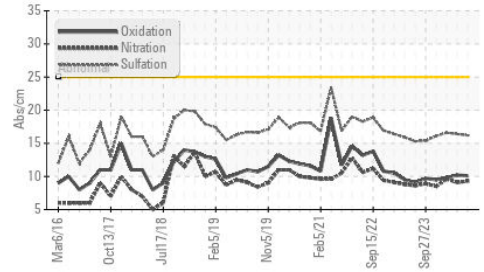
There is no indication of any contamination in the oil.

## FLUID CONDITION

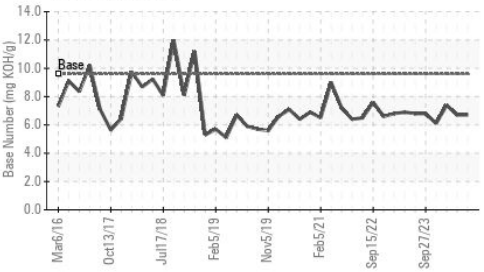
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | MW0061851 | MW0061839 | MW0061837 |
| Sample Date | | Client Info | | 14 Apr 2024 | 04 Mar 2024 | 23 Jan 2024 |
| Machine Age | hrs | Client Info | | 7684 | 7194 | 0 |
| Oil Age | hrs | Client Info | | 491 | 474 | 500 |
| Filter Age | hrs | Client Info | | 491 | 474 | 500 |
| Oil Changed | | Client Info | | Changed | Changed | Changed |
| Filter Changed | | Client Info | | Changed | Changed | Changed |
| Sample Status | | | | NORMAL | NORMAL | NORMAL |
| Iron | ppm | ASTM D5185m | >50 | 17 | 22 | 26 |
| Chromium | ppm | ASTM D5185m | >4 | <1 | <1 | <1 |
| Nickel | ppm | ASTM D5185m | >2 | 0 | <1 | <1 |
| Titanium | ppm | ASTM D5185m | | 0 | <1 | 2 |
| Silver | ppm | ASTM D5185m | >5 | <1 | <1 | <1 |
| Aluminum | ppm | ASTM D5185m | >12 | 2 | 2 | 2 |
| Lead | ppm | ASTM D5185m | >17 | <1 | 3 | 2 |
| Copper | ppm | ASTM D5185m | >70 | 0 | <1 | <1 |
| Tin | ppm | ASTM D5185m | >15 | 0 | 1 | 1 |
| Vanadium | ppm | ASTM D5185m | | 0 | <1 | <1 |
| White Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| Silicon | ppm | ASTM D5185m | >25 | 4 | 3 | 4 |
| Potassium | ppm | ASTM D5185m | >20 | <1 | 2 | 2 |
| Fuel | | WC Method | >4.0 | <1.0 | <1.0 | <1.0 |
| Water | | WC Method | >0.1 | NEG | NEG | NEG |
| Glycol | | WC Method | | NEG | NEG | NEG |
| Soot % | % | *ASTM D7844 | | 0.6 | 0.8 | 1 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | 9.3 | 9.1 | 9.6 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | 16.2 | 16.4 | 16.6 |
| Silt | scalar | *Visual | NONE | NONE | NONE | NONE |
| Debris | scalar | *Visual | NONE | NONE | 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 | >0.1 | NEG | NEG | NEG |
| Sodium | ppm | ASTM D5185m | | 0 | 2 | 3 |
| Boron | ppm | ASTM D5185m | | 47 | 34 | 36 |
| Barium | ppm | ASTM D5185m | | 0 | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | | 47 | 40 | 40 |
| Manganese | ppm | ASTM D5185m | | <1 | 1 | 1 |
| Magnesium | ppm | ASTM D5185m | | 34 | 31 | 18 |
| Calcium | ppm | ASTM D5185m | | 3692 | 3363 | 3451 |
| Phosphorus | ppm | ASTM D5185m | 1200 | 16 | 14 | 15 |
| Zinc | ppm | ASTM D5185m | 1300 | 21 | 13 | 16 |
| Sulfur | ppm | ASTM D5185m | 3200 | 2906 | 2634 | 2718 |
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | 10.1 | 10.2 | 9.8 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 9.6 | 6.7 | 6.7 | 7.4 |
| Visc @ 100°C | cSt | ASTM D445 | 15.7 | 15.3 | 15.4 | 15.0 |

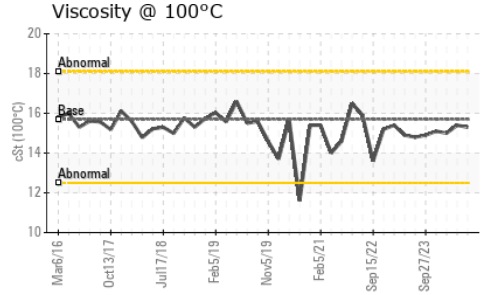
FT-IR (Direct Trend)



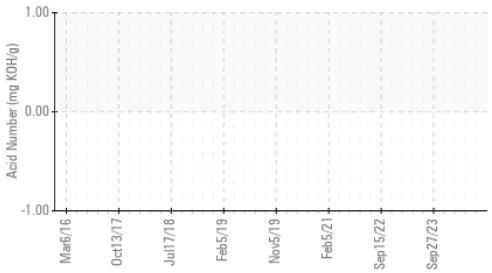

Base Number



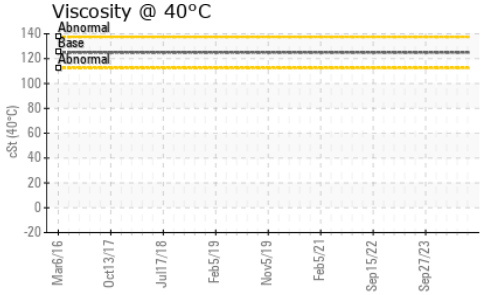

Viscosity @ 100°C



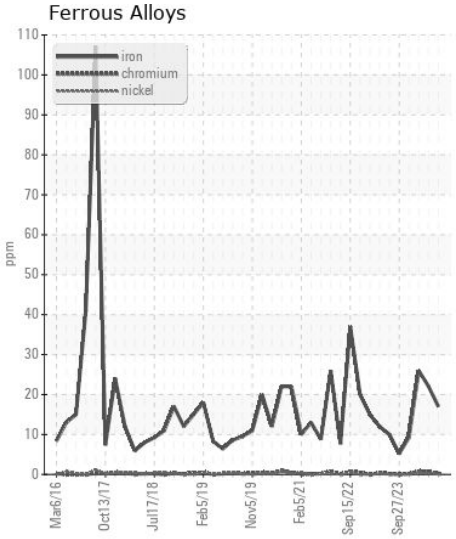

Acid Number



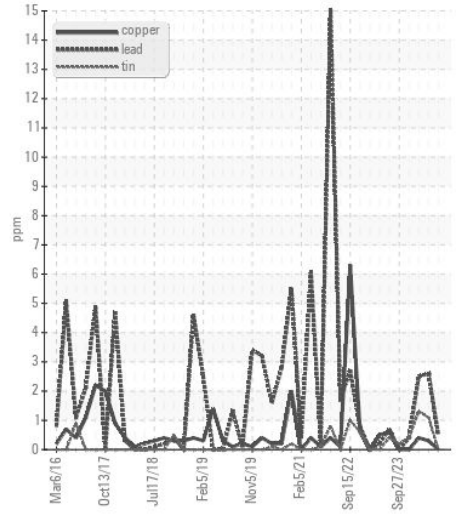

Viscosity @ 40°C



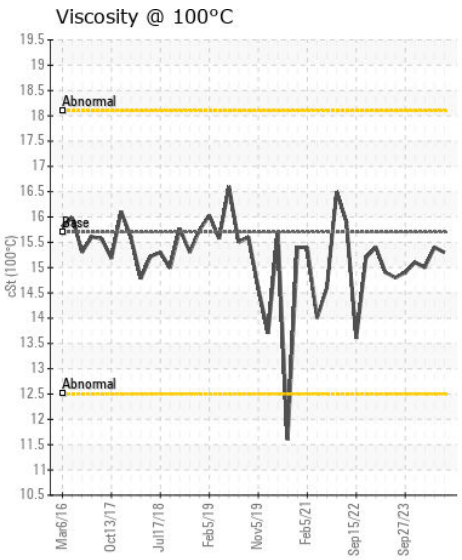

Ferrous Alloys



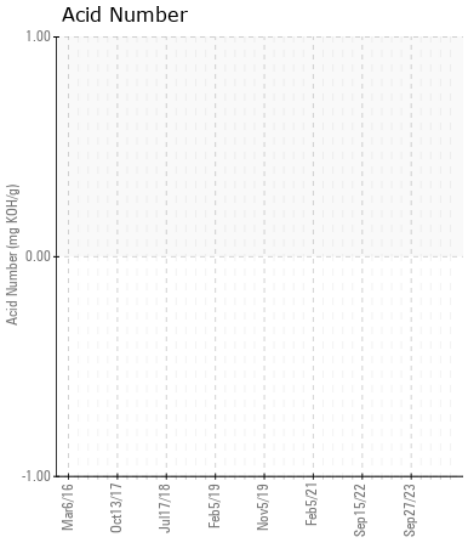

Non-ferrous Metals




Viscosity @ 100°C




Acid Number




Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : MW0061851
**Lab Number** : 06193255
**Unique Number** : 11050007
**Test Package** : MAR 2 ( Additional Tests: KV40, TAN Man )

**Received** : 28 May 2024
**Tested** : 30 May 2024
**Diagnosed** : 30 May 2024 - Sean Felton

*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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