



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

Machine Id

EMILY DAVIS

Component

Port Main Engine

Fluid

CHEVRON DELO 400 MULTIGRADE 15W40 (150 GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|----------------|-----|-------------|-----------|--------------------|-------------|-------------|
| Sample Number | | Client Info | | MW0061971 | MW0061902 | MW0061975 |
| Sample Date | | Client Info | | 02 Jul 2024 | 09 Jun 2024 | 13 May 2024 |
| Machine Age | hrs | Client Info | | 7831 | 7360 | 6876 |
| Oil Age | hrs | Client Info | | 934 | 463 | 1334 |
| Filter Age | hrs | Client Info | | 427 | 463 | 173 |
| Oil Changed | | Client Info | | Not Chngd | N/A | Changed |
| Filter Changed | | Client Info | | Not Chngd | N/A | Changed |
| Sample Status | | | | NORMAL | NORMAL | NORMAL |

WEAR

All component wear rates are normal.

| | | | | | | |
|--------------|--------|-------------|------|--------------|------|------|
| Iron | ppm | ASTM D5185m | >120 | 3 | 0 | 3 |
| Chromium | ppm | ASTM D5185m | >10 | <1 | 0 | 0 |
| Nickel | ppm | ASTM D5185m | >5 | <1 | <1 | 0 |
| Titanium | ppm | ASTM D5185m | | 11 | 12 | 15 |
| Silver | ppm | ASTM D5185m | >5 | 0 | 0 | <1 |
| Aluminum | ppm | ASTM D5185m | >20 | 2 | <1 | 1 |
| Lead | ppm | ASTM D5185m | >40 | 0 | 0 | <1 |
| Copper | ppm | ASTM D5185m | >300 | 1 | <1 | 3 |
| Tin | ppm | ASTM D5185m | >10 | <1 | 0 | 0 |
| Vanadium | ppm | ASTM D5185m | | <1 | <1 | <1 |
| White Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | NONE | NONE | NONE |

CONTAMINATION

There is no indication of any contamination in the oil.

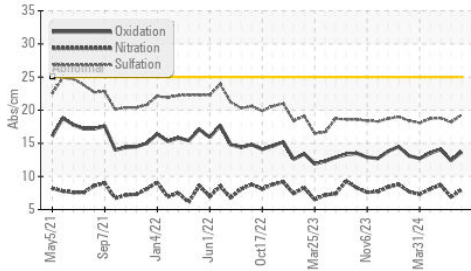
| | | | | | | |
|------------------|----------|-------------|-------|----------------|-------|-------|
| Silicon | ppm | ASTM D5185m | >25 | 4 | 3 | 3 |
| Potassium | ppm | ASTM D5185m | >20 | 2 | 5 | 3 |
| Fuel | | WC Method | >4.0 | <1.0 | <1.0 | <1.0 |
| Water | | WC Method | >0.1 | NEG | NEG | NEG |
| Glycol | | WC Method | | NEG | NEG | NEG |
| Soot % | % | *ASTM D7844 | | 0.1 | 0.1 | 0.1 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | 8.0 | 6.9 | 8.7 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | 19.3 | 18.2 | 18.8 |
| 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 |

FLUID CONDITION

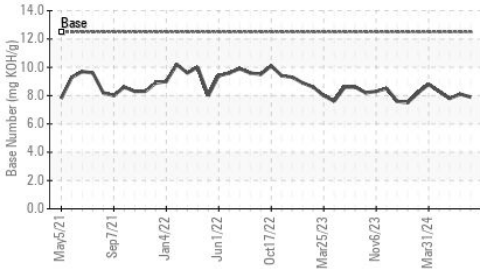
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

| | | | | | | |
|------------------|----------|-------------|------|--------------|------|------|
| Sodium | ppm | ASTM D5185m | | 3 | 3 | 2 |
| Boron | ppm | ASTM D5185m | 151 | 141 | 190 | 80 |
| Barium | ppm | ASTM D5185m | 0.4 | 0 | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | 250 | 38 | 36 | 30 |
| Manganese | ppm | ASTM D5185m | | <1 | 1 | <1 |
| Magnesium | ppm | ASTM D5185m | 0 | 606 | 653 | 686 |
| Calcium | ppm | ASTM D5185m | 2046 | 1356 | 1533 | 1534 |
| Phosphorus | ppm | ASTM D5185m | 1043 | 730 | 717 | 701 |
| Zinc | ppm | ASTM D5185m | 943 | 835 | 843 | 779 |
| Sulfur | ppm | ASTM D5185m | 5012 | 2759 | 3411 | 3307 |
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | 13.7 | 12.4 | 14.1 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 12.5 | 7.9 | 8.1 | 7.8 |
| Visc @ 100°C | cSt | ASTM D445 | 14.4 | 13.9 | 13.9 | 13.9 |

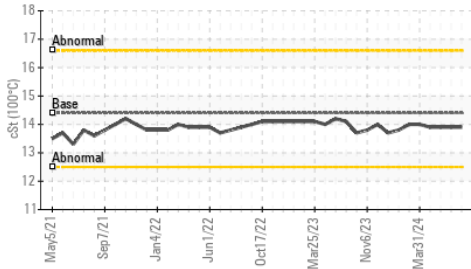
FT-IR (Direct Trend)



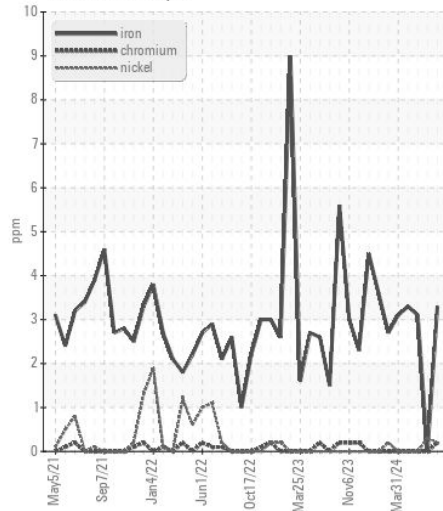
Base Number



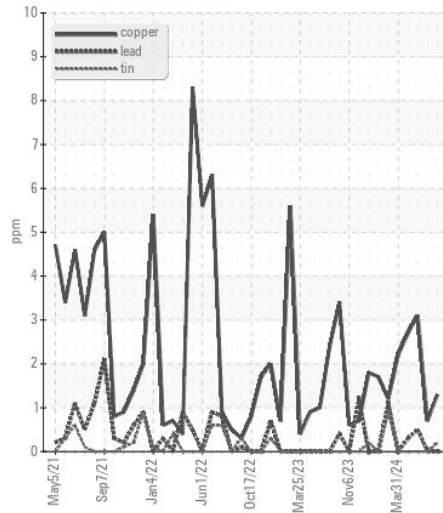
Viscosity @ 100°C



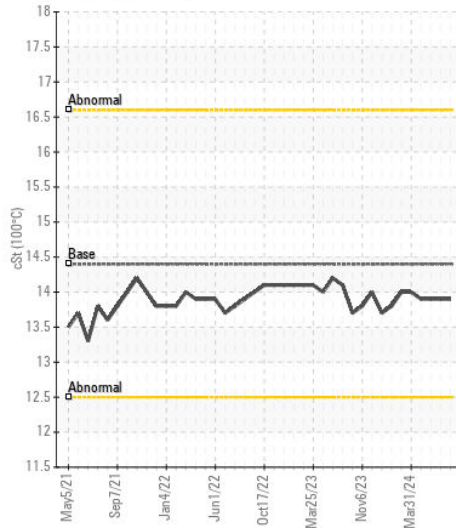
Ferrous Alloys



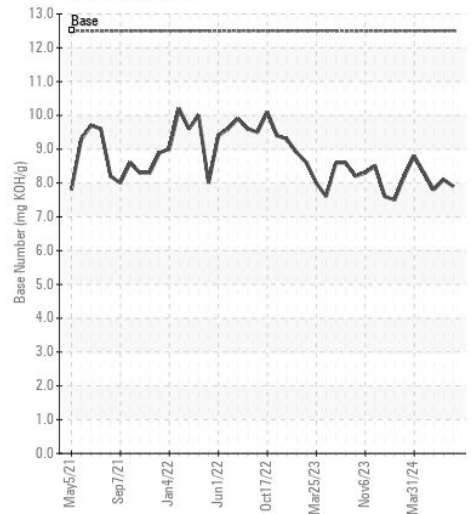
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : MW0061971
Lab Number : 06238690
Unique Number : 11127524
Test Package : MAR 2

Received : 16 Jul 2024
Tested : 17 Jul 2024
Diagnosed : 17 Jul 2024 - Wes Davis

MAGNOLIA MARINE TRANSPORT
 697 HAINING ROAD
 VICKSBURG, MS
 US 39183
 Contact: MMT MAINTENANCE PLANNERS
 mmtmaintenanceplanners@ergon.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)

T: x:
 F: (601)638-8028