MAR II

WEAR CHECK Inland Marine Oil Analysis Program

# OIL ANALYSIS REPORT

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

Area
## RICK HARNACK
Machine Id
## [RICK HARNACK] 008 685578-8
Component
## Starboard Genset
Fluid
## CHEVRON DELO 400 XLE 15W40 (7 GAL)

## RECOMMENDATION

The oil change at the time of sampling has been noted. Resample at the next service interval to monitor. No other corrective action is recommended at this time.

## WEAR

All component wear rates are normal.

## CONTAMINATION

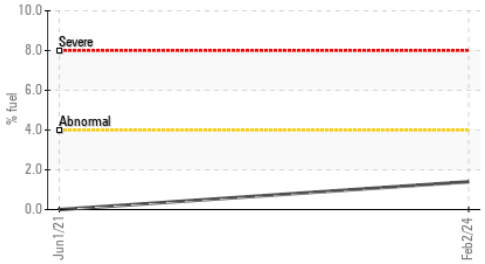
Light fuel dilution occurring. No other contaminants were detected in the oil.

## FLUID CONDITION

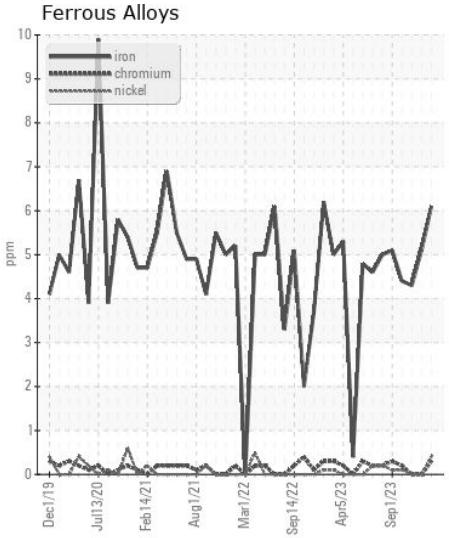
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | MW0068084 | MW0068085 | MW0055608 |
| Sample Date | | Client Info | | 02 Feb 2024 | 20 Jan 2024 | 16 Dec 2023 |
| Machine Age | hrs | Client Info | | 21824 | 21449 | 21049 |
| Oil Age | hrs | Client Info | | 368 | 404 | 395 |
| Filter Age | hrs | Client Info | | 368 | 404 | 395 |
| Oil Changed | | Client Info | | Changed | Not Changd | N/A |
| Filter Changed | | Client Info | | Changed | Not Changd | Not Changd |
| Sample Status | | | | NORMAL | NORMAL | NORMAL |
| Iron | ppm | ASTM D5185m | >50 | 6 | 5 | 4 |
| Chromium | ppm | ASTM D5185m | >4 | <1 | 0 | 0 |
| Nickel | ppm | ASTM D5185m | >2 | <1 | 0 | 0 |
| Titanium | ppm | ASTM D5185m | | 1 | 1 | 2 |
| Silver | ppm | ASTM D5185m | >5 | 0 | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >12 | 3 | 3 | 2 |
| Lead | ppm | ASTM D5185m | >17 | <1 | <1 | <1 |
| Copper | ppm | ASTM D5185m | >70 | <1 | 4 | <1 |
| Tin | ppm | ASTM D5185m | >15 | <1 | <1 | 0 |
| Vanadium | ppm | ASTM D5185m | | <1 | 0 | <1 |
| White Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| Silicon | ppm | ASTM D5185m | >25 | 7 | 6 | 6 |
| Potassium | ppm | ASTM D5185m | >20 | 2 | 1 | <1 |
| Fuel | % | ASTM D3524 | >4.0 | 1.4 | <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 | 7.0 | 7.4 | 7.7 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | 22.9 | 22.8 | 22.5 |
| 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 | 1 | 1 |
| Boron | ppm | ASTM D5185m | | 335 | 323 | 293 |
| Barium | ppm | ASTM D5185m | | 1 | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | | 130 | 114 | 111 |
| Manganese | ppm | ASTM D5185m | | 2 | 2 | 2 |
| Magnesium | ppm | ASTM D5185m | | 636 | 648 | 677 |
| Calcium | ppm | ASTM D5185m | | 1468 | 1476 | 1514 |
| Phosphorus | ppm | ASTM D5185m | 760 | 743 | 694 | 702 |
| Zinc | ppm | ASTM D5185m | 830 | 833 | 804 | 834 |
| Sulfur | ppm | ASTM D5185m | 2770 | 2698 | 2479 | 2606 |
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | 17.0 | 17.0 | 17.1 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 10.7 | 8.9 | 8.4 | 8.4 |
| Visc @ 100°C | cSt | ASTM D445 | 14.9 | 12.4 | 12.8 | 12.6 |

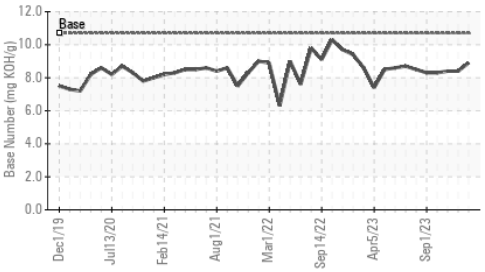
Fuel Dilution



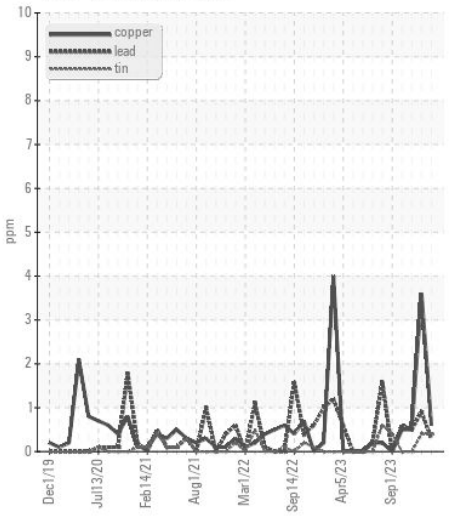

Ferrous Alloys



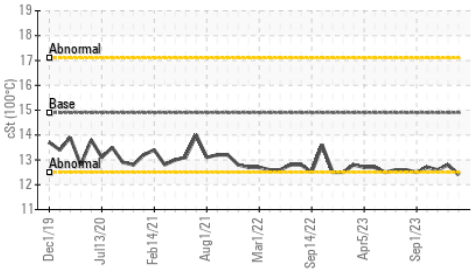

Base Number



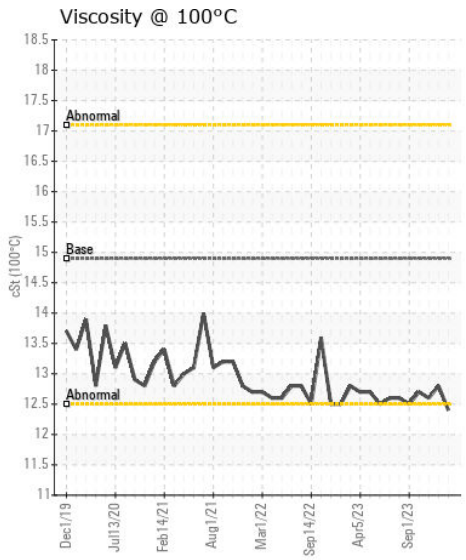

Non-ferrous Metals



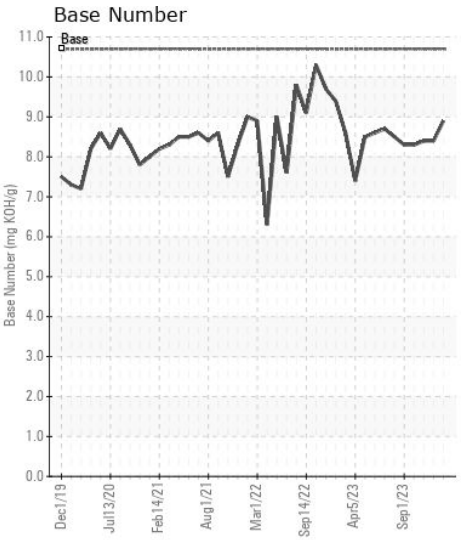

Viscosity @ 100°C




Viscosity @ 100°C




Base Number




Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : MW0068084 **Received** : 27 Feb 2024
**Lab Number** : 06102318 **Tested** : 04 Mar 2024
**Unique Number** : 10900548 **Diagnosed** : 04 Mar 2024 - Wes Davis
**Test Package** : MAR 2 ( Additional Tests: FuelDilution, PercentFuel )

*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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