



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

Machine Id
BROMLEY
Component
Starboard Genset
Fluid
CHEVRON URSA SUPER PLUS EC 15W40 (3 GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|----------------|-----|-------------|-----------|--------------------|-------------|-------------|
| Sample Number | | Client Info | | MW0057111 | MW0062714 | MW0045713 |
| Sample Date | | Client Info | | 10 Feb 2024 | 28 Dec 2023 | 04 Nov 2023 |
| Machine Age | hrs | Client Info | | 3191 | 2664 | 2068 |
| Oil Age | hrs | Client Info | | 500 | 500 | 1000 |
| Filter Age | hrs | Client Info | | 500 | 500 | 1000 |
| Oil Changed | | Client Info | | Changed | Changed | Changed |
| Filter Changed | | Client Info | | Changed | Changed | Changed |
| Sample Status | | | | NORMAL | NORMAL | NORMAL |

WEAR

All component wear rates are normal.

| | | | | | | |
|--------------|--------|-------------|------|--------------|------|------|
| Iron | ppm | ASTM D5185m | >50 | 6 | 6 | 5 |
| Chromium | ppm | ASTM D5185m | >4 | <1 | 0 | 0 |
| Nickel | ppm | ASTM D5185m | >2 | 0 | 0 | 0 |
| Titanium | ppm | ASTM D5185m | | 0 | 0 | 0 |
| Silver | ppm | ASTM D5185m | >5 | 0 | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >12 | 3 | 3 | 3 |
| Lead | ppm | ASTM D5185m | >17 | 0 | <1 | 0 |
| Copper | ppm | ASTM D5185m | >70 | <1 | <1 | 0 |
| Tin | ppm | ASTM D5185m | >15 | <1 | <1 | 0 |
| Vanadium | ppm | ASTM D5185m | | 0 | <1 | 0 |
| White Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | NONE | NONE | NONE |

CONTAMINATION

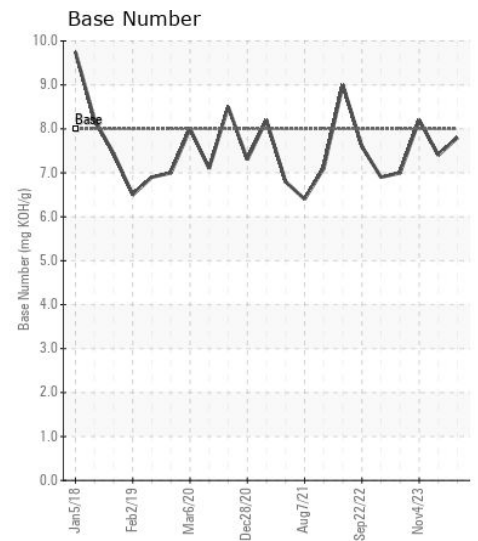
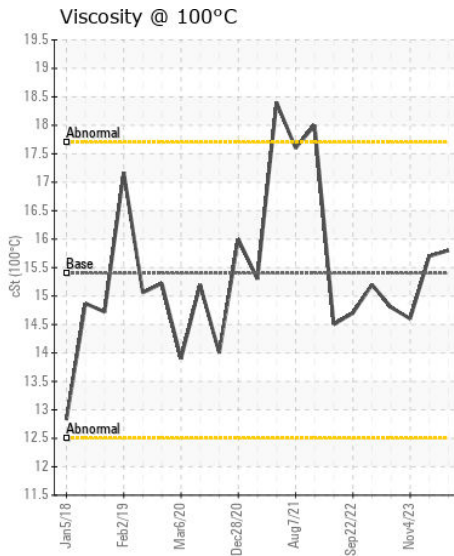
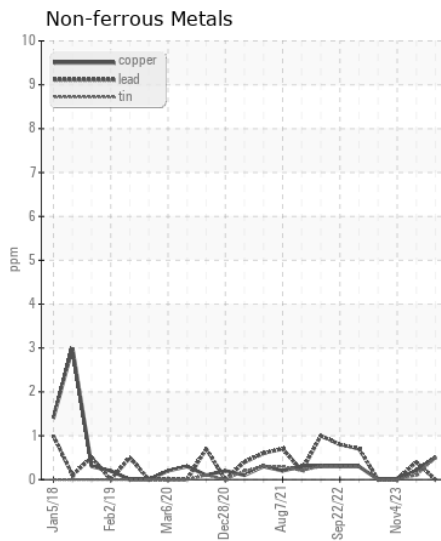
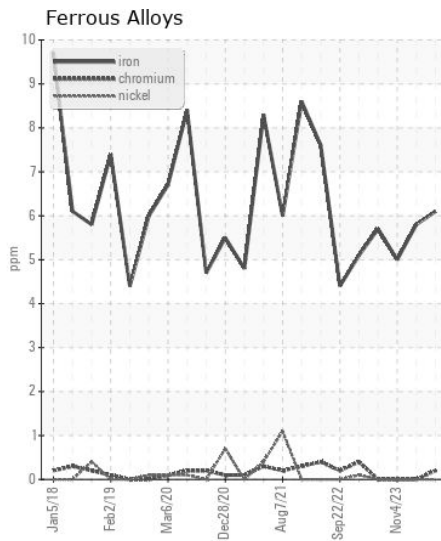
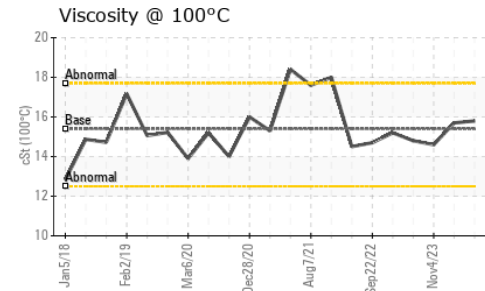
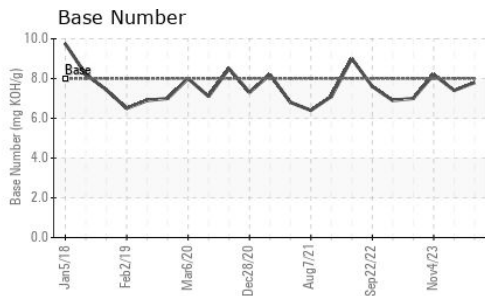
There is no indication of any contamination in the oil.

| | | | | | | |
|------------------|----------|-------------|-------|----------------|-------|-------|
| Silicon | ppm | ASTM D5185m | >25 | 4 | 4 | 4 |
| Potassium | ppm | ASTM D5185m | >20 | <1 | 0 | <1 |
| 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 | 9.3 | 10.3 | 9.7 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | 23.4 | 23.7 | 24.7 |
| 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 | | 2 | 3 | <1 |
| Boron | ppm | ASTM D5185m | | 98 | 58 | 294 |
| Barium | ppm | ASTM D5185m | | 0 | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | | 59 | 69 | 119 |
| Manganese | ppm | ASTM D5185m | | <1 | 0 | 0 |
| Magnesium | ppm | ASTM D5185m | | 567 | 517 | 732 |
| Calcium | ppm | ASTM D5185m | | 1561 | 1937 | 1833 |
| Phosphorus | ppm | ASTM D5185m | 1200 | 1020 | 1028 | 766 |
| Zinc | ppm | ASTM D5185m | 1300 | 1329 | 1392 | 1061 |
| Sulfur | ppm | ASTM D5185m | | 2790 | 2986 | 2754 |
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | 22.7 | 23.7 | 21.9 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 8.0 | 7.8 | 7.4 | 8.2 |
| Visc @ 100°C | cSt | ASTM D445 | 15.4 | 15.8 | 15.7 | 14.6 |



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : MW0057111
Lab Number : 06089377
Unique Number : 10876822
Test Package : MAR 2

Received : 14 Feb 2024
Tested : 15 Feb 2024
Diagnosed : 15 Feb 2024 - Wes Davis

C & B MARINE
 50 E RIVERCENTER BLVD, SUITE 1180
 COVINGTON, KY
 US 41011

Contact: DAVID WESTRICH
 dwestrich@carlislebray.com

T: (812)290-4063
 F: (859)655-7504

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)