



OIL ANALYSIS REPORT

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

Area
360 MARINE LTD
 Machine Id
FEED CARRIER MV 360 SUPPLIER
 Component
Main Engine
 Fluid
CASTROL TECTION EXTRA SAE 15W-40 (600 LTR)

RECOMMENDATION

Resample at the next service interval to monitor.

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|----------------|-----|-------------|-----------|--------------------|-------------|-------------|
| Sample Number | | Client Info | | OF0000562 | OF0000559 | OF0000556 |
| Sample Date | | Client Info | | 24 Nov 2023 | 25 Dec 2022 | 29 Oct 2022 |
| Machine Age | hrs | Client Info | | 0 | 20008 | 19568 |
| Oil Age | hrs | Client Info | | 1715 | 1500 | 700 |
| Filter Age | hrs | Client Info | | 715 | 1500 | 700 |
| Oil Changed | | Client Info | | Not Changd | Changed | Not Changd |
| Filter Changed | | Client Info | | Changed | Not Changd | Not Changd |
| Sample Status | | | | NORMAL | NORMAL | NORMAL |

WEAR

All component wear rates are normal.

| | | | | | | |
|--------------|--------|---------------|------|--------------|-----|-----|
| Iron | ppm | ASTM D5185(m) | >75 | 6 | 5 | 3 |
| Chromium | ppm | ASTM D5185(m) | >8 | 0 | 0 | 0 |
| Nickel | ppm | ASTM D5185(m) | >2 | <1 | <1 | <1 |
| Titanium | ppm | ASTM D5185(m) | >3 | 0 | <1 | <1 |
| Silver | ppm | ASTM D5185(m) | >2 | <1 | 0 | 0 |
| Aluminum | ppm | ASTM D5185(m) | >15 | 1 | <1 | 1 |
| Lead | ppm | ASTM D5185(m) | >18 | 2 | <1 | <1 |
| Copper | ppm | ASTM D5185(m) | >80 | 3 | 4 | 2 |
| Tin | ppm | ASTM D5185(m) | >14 | 0 | 0 | 0 |
| Vanadium | ppm | ASTM D5185(m) | | 0 | 0 | 0 |
| White Metal | scalar | Visual* | NONE | NONE | --- | --- |
| Yellow Metal | scalar | Visual* | NONE | NONE | --- | --- |

CONTAMINATION

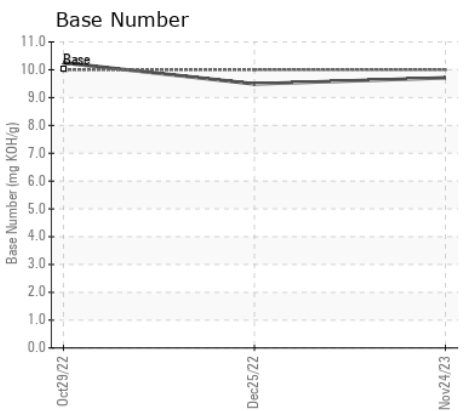
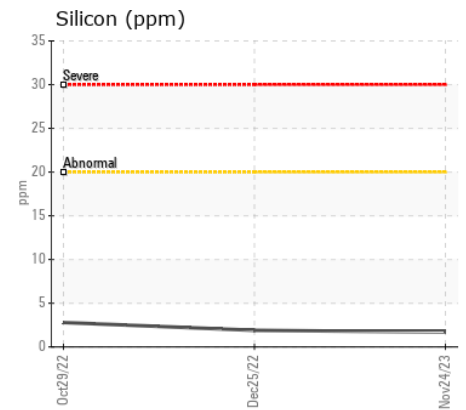
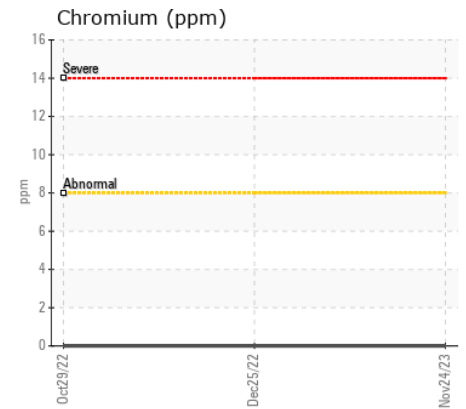
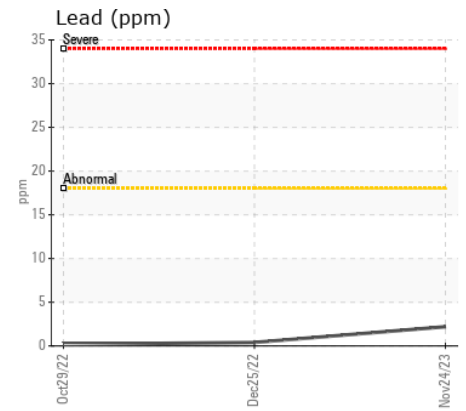
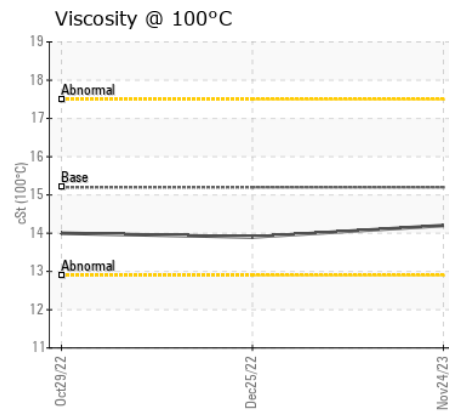
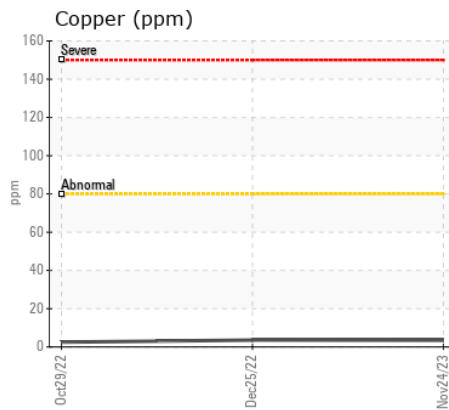
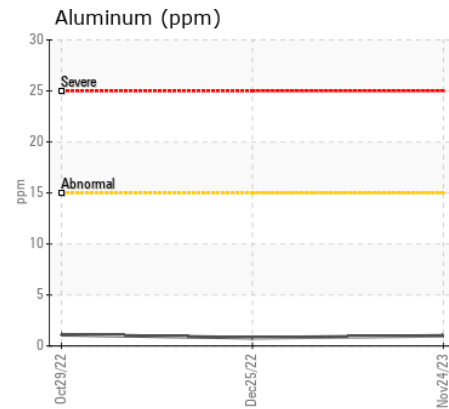
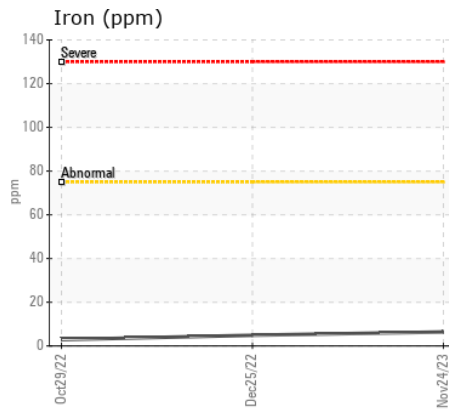
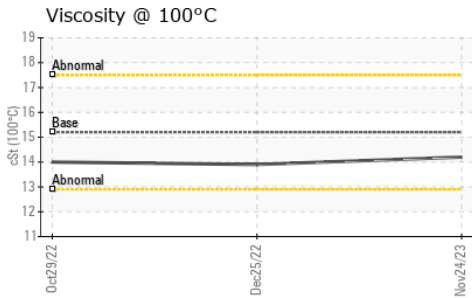
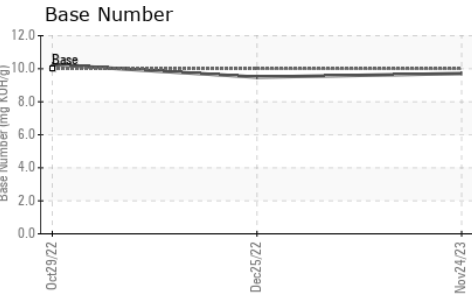
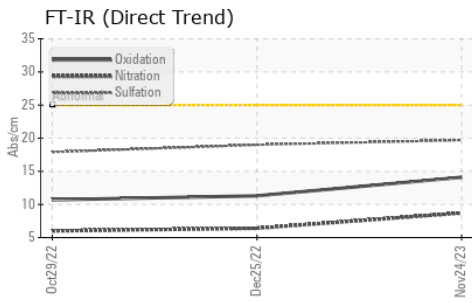
There is no indication of any contamination in the oil.

| | | | | | | |
|------------------|----------|---------------|-------|----------------|-------|-------|
| Silicon | ppm | ASTM D5185(m) | >20 | 2 | 2 | 3 |
| Potassium | ppm | ASTM D5185(m) | >20 | <1 | 1 | 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 | 0 |
| Nitration | Abs/cm | ASTM D7624* | >20 | 8.7 | 6.4 | 6.0 |
| Sulfation | Abs/.1mm | ASTM D7415* | >30 | 19.7 | 19.0 | 17.9 |
| Silt | scalar | Visual* | NONE | NONE | --- | --- |
| Debris | scalar | Visual* | NONE | VLITE | --- | --- |
| Sand/Dirt | scalar | Visual* | NONE | NONE | --- | --- |
| Appearance | scalar | Visual* | 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 D5185(m) | >75 | 1 | <1 | 1 |
| Boron | ppm | ASTM D5185(m) | 30 | 18 | 2 | 1 |
| Barium | ppm | ASTM D5185(m) | | <1 | 0 | 0 |
| Molybdenum | ppm | ASTM D5185(m) | | <1 | <1 | <1 |
| Manganese | ppm | ASTM D5185(m) | | 0 | <1 | <1 |
| Magnesium | ppm | ASTM D5185(m) | 110 | 12 | 9 | 9 |
| Calcium | ppm | ASTM D5185(m) | 2740 | 2926 | 3669 | 3637 |
| Phosphorus | ppm | ASTM D5185(m) | 1240 | 978 | 1003 | 1021 |
| Zinc | ppm | ASTM D5185(m) | 1350 | 1145 | 1089 | 1092 |
| Sulfur | ppm | ASTM D5185(m) | 3520 | 3265 | 3682 | 3705 |
| Oxidation | Abs/.1mm | ASTM D7414* | >25 | 14.1 | 11.3 | 10.7 |
| Base Number (BN) | mg KOH/g | ASTM D2896* | 10.0 | 9.71 | 9.49 | 10.25 |
| Visc @ 100°C | cSt | ASTM D7279(m) | 15.2 | 14.2 | 13.9 | 14.0 |



ISO 17025:2017
Accredited
Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : OF0000562
Lab Number : 02603374
Unique Number : 5696459
Test Package : MOB 2 (Additional Tests: Visual)

Received : 15 Dec 2023
Tested : 20 Dec 2023
Diagnosed : 20 Dec 2023 - Kevin Marson

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To discuss this sample report, contact Customer Service at 1-800-268-2131.
 Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab.
 Validity of results and interpretation are based on the sample and information as supplied.