



# OIL ANALYSIS REPORT

Sample Rating Trend



FUEL



Machine Id

**[ ] NOT GIVEN WC0874806**

Component

Starboard Genset

Fluid

{not provided} (--- GAL)

## DIAGNOSIS

### Recommendation

We advise that you check the fuel injection system. Resample at the next service interval to monitor.

### Wear

All component wear rates are normal.

### Contamination

There is a moderate amount of fuel present in the oil.

### Fluid Condition

Fuel is present in the oil and is lowering the viscosity. The BN result indicates that there is suitable alkalinity remaining in the oil.

| SAMPLE INFORMATION |             | method      | limit/base | current            | history1 | history2 |
|--------------------|-------------|-------------|------------|--------------------|----------|----------|
| Sample Number      | Client Info |             |            | <b>WC0874806</b>   | ---      | ---      |
| Sample Date        | Client Info |             |            | <b>22 Apr 2024</b> | ---      | ---      |
| Machine Age        | hrs         | Client Info |            | <b>0</b>           | ---      | ---      |
| Oil Age            | hrs         | Client Info |            | <b>0</b>           | ---      | ---      |
| Oil Changed        | Client Info |             |            | <b>N/A</b>         | ---      | ---      |
| Sample Status      |             |             |            | <b>ABNORMAL</b>    | ---      | ---      |

| CONTAMINATION |           | method | limit/base | current    | history1 | history2 |
|---------------|-----------|--------|------------|------------|----------|----------|
| Glycol        | WC Method |        |            | <b>NEG</b> | ---      | ---      |

| WEAR METALS |     | method      | limit/base | current      | history1 | history2 |
|-------------|-----|-------------|------------|--------------|----------|----------|
| Iron        | ppm | ASTM D5185m | >50        | <b>15</b>    | ---      | ---      |
| Chromium    | ppm | ASTM D5185m | >4         | <b>&lt;1</b> | ---      | ---      |
| Nickel      | ppm | ASTM D5185m | >2         | <b>0</b>     | ---      | ---      |
| Titanium    | ppm | ASTM D5185m |            | <b>0</b>     | ---      | ---      |
| Silver      | ppm | ASTM D5185m | >5         | <b>0</b>     | ---      | ---      |
| Aluminum    | ppm | ASTM D5185m | >12        | <b>1</b>     | ---      | ---      |
| Lead        | ppm | ASTM D5185m | >17        | <b>&lt;1</b> | ---      | ---      |
| Copper      | ppm | ASTM D5185m | >70        | <b>0</b>     | ---      | ---      |
| Tin         | ppm | ASTM D5185m | >15        | <b>&lt;1</b> | ---      | ---      |
| Vanadium    | ppm | ASTM D5185m |            | <b>0</b>     | ---      | ---      |
| Cadmium     | ppm | ASTM D5185m |            | <b>0</b>     | ---      | ---      |

| ADDITIVES  |     | method      | limit/base | current      | history1 | history2 |
|------------|-----|-------------|------------|--------------|----------|----------|
| Boron      | ppm | ASTM D5185m |            | <b>14</b>    | ---      | ---      |
| Barium     | ppm | ASTM D5185m |            | <b>0</b>     | ---      | ---      |
| Molybdenum | ppm | ASTM D5185m |            | <b>61</b>    | ---      | ---      |
| Manganese  | ppm | ASTM D5185m |            | <b>&lt;1</b> | ---      | ---      |
| Magnesium  | ppm | ASTM D5185m |            | <b>1396</b>  | ---      | ---      |
| Calcium    | ppm | ASTM D5185m |            | <b>1140</b>  | ---      | ---      |
| Phosphorus | ppm | ASTM D5185m |            | <b>1040</b>  | ---      | ---      |
| Zinc       | ppm | ASTM D5185m |            | <b>1255</b>  | ---      | ---      |
| Sulfur     | ppm | ASTM D5185m |            | <b>3513</b>  | ---      | ---      |

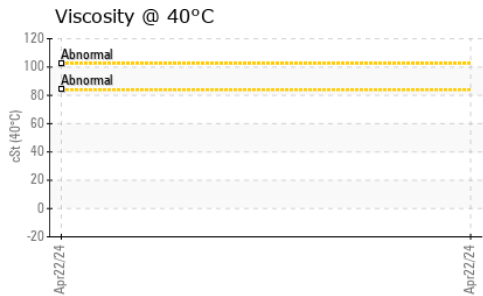
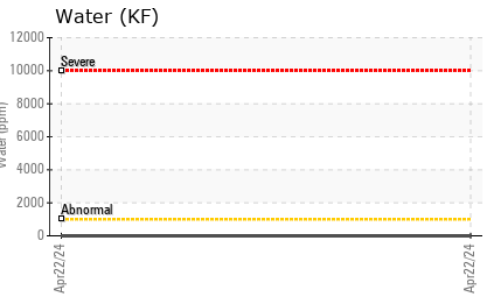
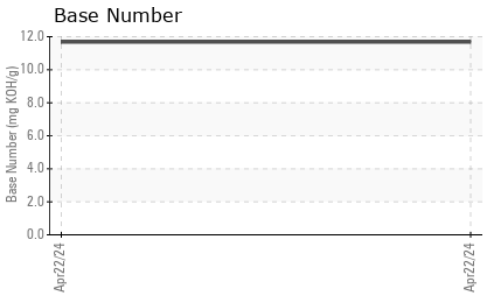
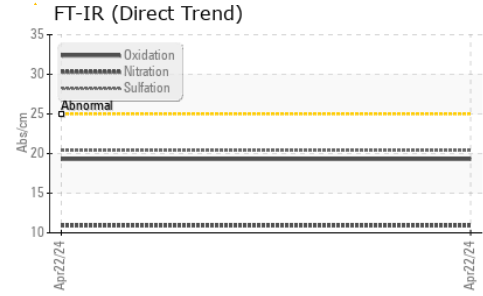
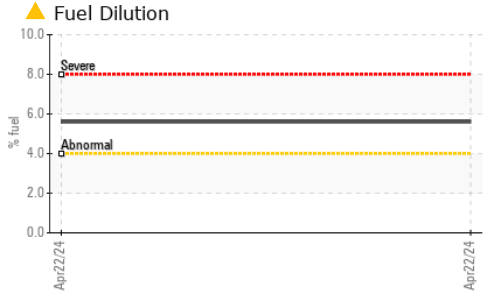
| CONTAMINANTS |     | method      | limit/base | current      | history1 | history2 |
|--------------|-----|-------------|------------|--------------|----------|----------|
| Silicon      | ppm | ASTM D5185m | >25        | <b>5</b>     | ---      | ---      |
| Sodium       | ppm | ASTM D5185m |            | <b>1</b>     | ---      | ---      |
| Potassium    | ppm | ASTM D5185m | >20        | <b>1</b>     | ---      | ---      |
| Fuel         | %   | ASTM D3524  | >4.0       | <b>▲ 5.6</b> | ---      | ---      |
| Water        | %   | ASTM D6304  | >0.1       | <b>NEG</b>   | ---      | ---      |

| INFRA-RED |          | method      | limit/base | current     | history1 | history2 |
|-----------|----------|-------------|------------|-------------|----------|----------|
| Soot %    | %        | *ASTM D7844 |            | <b>0.2</b>  | ---      | ---      |
| Nitration | Abs/cm   | *ASTM D7624 | >20        | <b>10.9</b> | ---      | ---      |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30        | <b>20.4</b> | ---      | ---      |

| FLUID DEGRADATION |          | method      | limit/base | current      | history1 | history2 |
|-------------------|----------|-------------|------------|--------------|----------|----------|
| Oxidation         | Abs/.1mm | *ASTM D7414 | >25        | <b>19.3</b>  | ---      | ---      |
| Base Number (BN)  | mg KOH/g | ASTM D2896  |            | <b>11.68</b> | ---      | ---      |



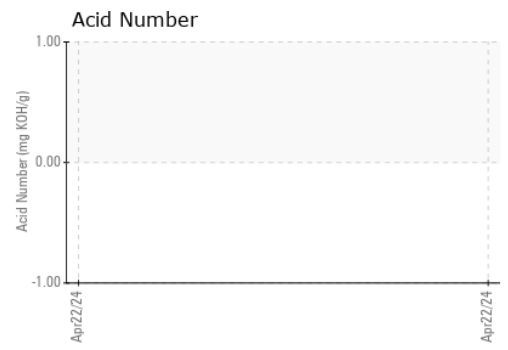
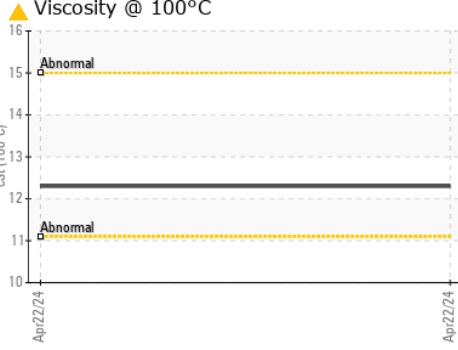
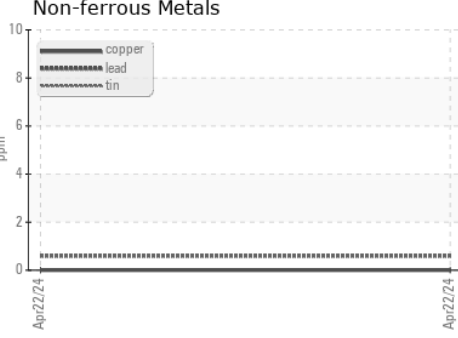
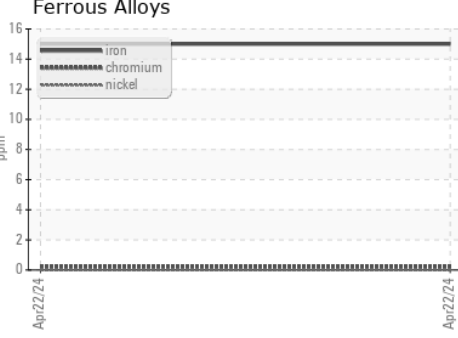
# OIL ANALYSIS REPORT



| VISUAL           | method | limit/base | current | history1 | history2 |     |
|------------------|--------|------------|---------|----------|----------|-----|
| White Metal      | scalar | *Visual    | NONE    | NONE     | ---      | --- |
| Yellow Metal     | scalar | *Visual    | NONE    | NONE     | ---      | --- |
| Precipitate      | scalar | *Visual    | NONE    | NONE     | ---      | --- |
| Silt             | scalar | *Visual    | NONE    | NONE     | ---      | --- |
| Debris           | scalar | *Visual    | NONE    | NONE     | ---      | --- |
| Sand/Dirt        | scalar | *Visual    | NONE    | NONE     | ---      | --- |
| Appearance       | scalar | *Visual    | NORML   | NORML    | ---      | --- |
| Odor             | scalar | *Visual    | NORML   | NORML    | ---      | --- |
| Emulsified Water | scalar | *Visual    | >0.1    | NEG      | ---      | --- |
| Free Water       | scalar | *Visual    |         | NEG      | ---      | --- |

| FLUID PROPERTIES | method | limit/base | current | history1 | history2 |
|------------------|--------|------------|---------|----------|----------|
| Visc @ 100°C     | cSt    | ASTM D445  | ▲ 12.3  | ---      | ---      |

## GRAPHS



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : WC0874806  
**Lab Number** : 06157892  
**Unique Number** : 10993315  
**Test Package** : IND 2 ( Additional Tests: FUELDILUTION, KF, PercentFuel, TAN Ma

**MARATHON PETROLEUM CO.**  
 101 12TH ST  
 CATLETTSBURG, KY  
 US 41169

To discuss this sample report, contact Customer Service at 1-800-237-1369.

Contact: CORY GUMBERT  
cagumbert@marathonpetroleum.com

\* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

T: (606)585-3950

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

F: x: