



|                 |               |
|-----------------|---------------|
| WEAR            | <b>NORMAL</b> |
| CONTAMINATION   | <b>NORMAL</b> |
| FLUID CONDITION | <b>NORMAL</b> |

Machine Id  
**PRAIRIE LAND**  
Component  
**Starboard Main Engine**  
Fluid  
**PETRO CANADA DURON MARINE SAE 40 (19 GAL)**

**RECOMMENDATION**

Resample at the next service interval to monitor.

| Test           | UOM | Method      | Limit/Abn | Current            | History1    | History2    |
|----------------|-----|-------------|-----------|--------------------|-------------|-------------|
| Sample Number  |     | Client Info |           | <b>MWM696819</b>   | MWM696867   | MWM696864   |
| Sample Date    |     | Client Info |           | <b>18 Jun 2024</b> | 01 May 2024 | 27 Mar 2024 |
| Machine Age    | hrs | Client Info |           | <b>0</b>           | 0           | 0           |
| Oil Age        | hrs | Client Info |           | <b>800</b>         | 800         | 800         |
| Filter Age     | hrs | Client Info |           | <b>0</b>           | 0           | 0           |
| Oil Changed    |     | Client Info |           | <b>Changed</b>     | Changed     | Changed     |
| Filter Changed |     | Client Info |           | <b>Changed</b>     | Changed     | Changed     |
| Sample Status  |     |             |           | <b>NORMAL</b>      | NORMAL      | NORMAL      |

**WEAR**

All component wear rates are normal.

|              |        |             |      |              |      |      |
|--------------|--------|-------------|------|--------------|------|------|
| Iron         | ppm    | ASTM D5185m | >75  | <b>2</b>     | 4    | 6    |
| Chromium     | ppm    | ASTM D5185m | >8   | <b>0</b>     | <1   | <1   |
| Nickel       | ppm    | ASTM D5185m | >2   | <b>1</b>     | <1   | <1   |
| Titanium     | ppm    | ASTM D5185m | >3   | <b>0</b>     | <1   | <1   |
| Silver       | ppm    | ASTM D5185m | >2   | <b>&lt;1</b> | <1   | <1   |
| Aluminum     | ppm    | ASTM D5185m | >15  | <b>1</b>     | 2    | 2    |
| Lead         | ppm    | ASTM D5185m | >18  | <b>1</b>     | 1    | 1    |
| Copper       | ppm    | ASTM D5185m | >80  | <b>0</b>     | 1    | 1    |
| Tin          | ppm    | ASTM D5185m | >14  | <b>1</b>     | 1    | 1    |
| Vanadium     | ppm    | ASTM D5185m |      | <b>&lt;1</b> | <1   | <1   |
| White Metal  | scalar | *Visual     | NONE | <b>NONE</b>  | NONE | NONE |
| Yellow Metal | scalar | *Visual     | NONE | <b>NONE</b>  | NONE | NONE |

**CONTAMINATION**

There is no indication of any contamination in the oil.

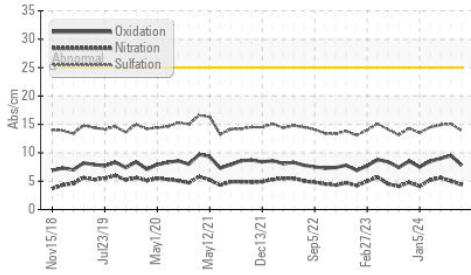
|                  |          |             |       |                |       |       |
|------------------|----------|-------------|-------|----------------|-------|-------|
| Silicon          | ppm      | ASTM D5185m | >20   | <b>2</b>       | 3     | 3     |
| Potassium        | ppm      | ASTM D5185m | >20   | <b>5</b>       | 2     | 2     |
| Fuel             |          | WC Method   | >4.0  | <b>&lt;1.0</b> | <1.0  | <1.0  |
| Water            |          | WC Method   | >0.1  | <b>NEG</b>     | NEG   | NEG   |
| Glycol           |          | WC Method   |       | <b>NEG</b>     | NEG   | NEG   |
| Soot %           | %        | *ASTM D7844 |       | <b>0.2</b>     | 0.2   | 0.1   |
| Nitration        | Abs/cm   | *ASTM D7624 | >20   | <b>4.4</b>     | 5.0   | 5.6   |
| Sulfation        | Abs/.1mm | *ASTM D7415 | >30   | <b>13.9</b>    | 15.1  | 14.9  |
| Silt             | scalar   | *Visual     | NONE  | <b>NONE</b>    | NONE  | NONE  |
| Debris           | scalar   | *Visual     | NONE  | <b>NONE</b>    | NONE  | NONE  |
| Sand/Dirt        | scalar   | *Visual     | NONE  | <b>NONE</b>    | NONE  | NONE  |
| Appearance       | scalar   | *Visual     | NORML | <b>NORML</b>   | NORML | NORML |
| Odor             | scalar   | *Visual     | NORML | <b>NORML</b>   | NORML | NORML |
| Emulsified Water | scalar   | *Visual     | >0.1  | <b>NEG</b>     | NEG   | NEG   |

**FLUID CONDITION**

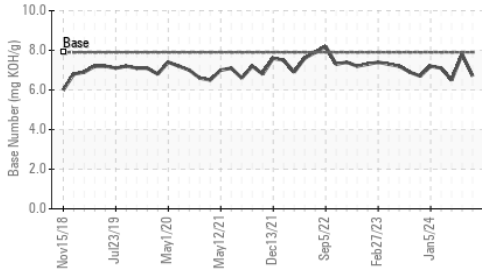
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

|                  |          |             |      |              |      |      |
|------------------|----------|-------------|------|--------------|------|------|
| Sodium           | ppm      | ASTM D5185m | >75  | <b>2</b>     | 0    | 0    |
| Boron            | ppm      | ASTM D5185m | 1.0  | <b>22</b>    | 23   | 1    |
| Barium           | ppm      | ASTM D5185m | 1.0  | <b>0</b>     | 0    | 0    |
| Molybdenum       | ppm      | ASTM D5185m | 1.0  | <b>3</b>     | 6    | 5    |
| Manganese        | ppm      | ASTM D5185m | 1    | <b>&lt;1</b> | <1   | <1   |
| Magnesium        | ppm      | ASTM D5185m | 15   | <b>961</b>   | 856  | 916  |
| Calcium          | ppm      | ASTM D5185m | 2540 | <b>1216</b>  | 1180 | 1104 |
| Phosphorus       | ppm      | ASTM D5185m | 1000 | <b>1270</b>  | 1163 | 1211 |
| Zinc             | ppm      | ASTM D5185m | 1110 | <b>1518</b>  | 1305 | 1344 |
| Sulfur           | ppm      | ASTM D5185m | 3700 | <b>4496</b>  | 3549 | 3583 |
| Oxidation        | Abs/.1mm | *ASTM D7414 | >25  | <b>7.8</b>   | 9.5  | 9.0  |
| Base Number (BN) | mg KOH/g | ASTM D2896  | 7.9  | <b>6.7</b>   | 7.8  | 6.5  |
| Visc @ 100°C     | cSt      | ASTM D445   | 14.6 | <b>13.6</b>  | 13.8 | 13.5 |

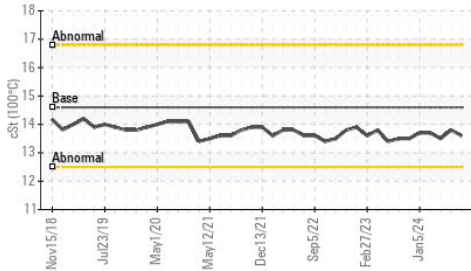
**FT-IR (Direct Trend)**



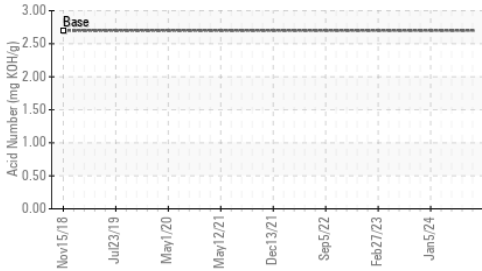
**Base Number**



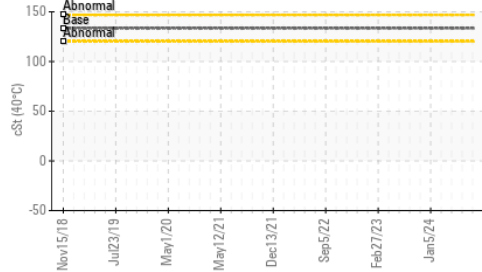
**Viscosity @ 100°C**



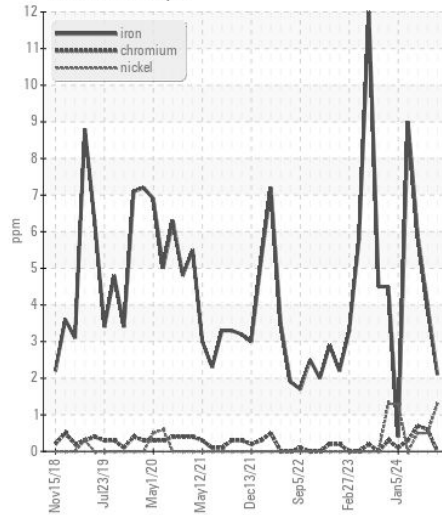
**Acid Number**



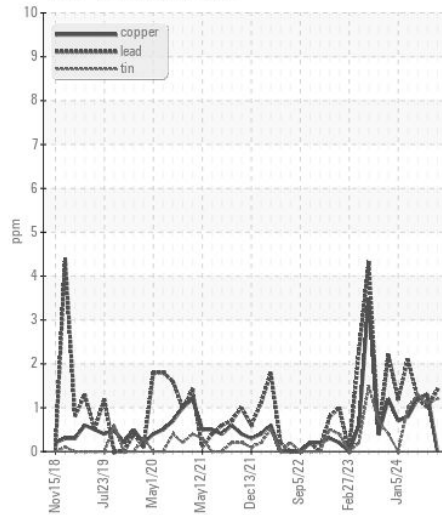
**Viscosity @ 40°C**



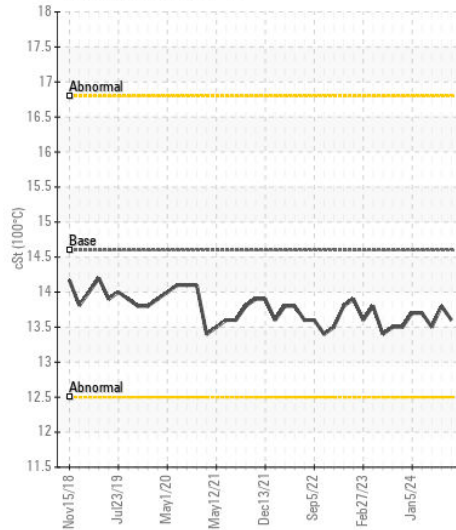
**Ferrous Alloys**



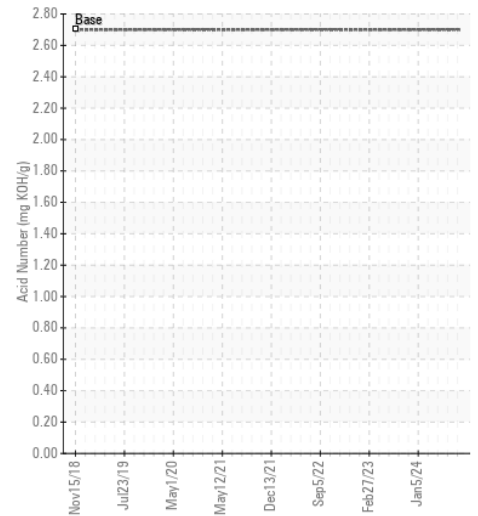
**Non-ferrous Metals**



**Viscosity @ 100°C**



**Acid Number**



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : MWM696819 **Received** : 01 Jul 2024  
**Lab Number** : 06225441 **Tested** : 03 Jul 2024  
**Unique Number** : 11103638 **Diagnosed** : 03 Jul 2024 - Don Baldrige  
**Test Package** : MAR 2 ( Additional Tests: KV40, TAN Man )

**AMERICAN RIVER TRANS. CO. PEORIA**  
 534 WESLEY RD  
 CREVECOEUR, IL  
 US 61610  
 Contact: STEVE BUCCO

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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