



# OIL ANALYSIS REPORT

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

Machine Id  
**Port Steering Gear (S/N T2P01011)**  
 Component  
**Port Steering**  
 Fluid  
**PETRO CANADA HYDREX MV 32 (114 LTR)**

## RECOMMENDATION

The fluid change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

| Test           | UOM | Method      | Limit/Abn | Current            | History1    | History2    |
|----------------|-----|-------------|-----------|--------------------|-------------|-------------|
| Sample Number  |     | Client Info |           | <b>WC0829982</b>   | WC0829977   | WC0754148   |
| Sample Date    |     | Client Info |           | <b>05 Jun 2024</b> | 09 Aug 2023 | 21 Jun 2023 |
| Machine Age    | hrs | Client Info |           | <b>19920</b>       | 18400       | 18000       |
| Oil Age        | hrs | Client Info |           | <b>920</b>         | 18400       | 18000       |
| Filter Age     | hrs | Client Info |           | <b>920</b>         | 0           | 0           |
| Oil Changed    |     | Client Info |           | <b>Changed</b>     | Not Changd  | N/A         |
| Filter Changed |     | Client Info |           | <b>Changed</b>     | Changed     | Changed     |
| Sample Status  |     |             |           | <b>ABNORMAL</b>    | ABNORMAL    | ABNORMAL    |

## WEAR

All component wear rates are normal.

|              |        |               |      |              |      |      |
|--------------|--------|---------------|------|--------------|------|------|
| Iron         | ppm    | ASTM D5185(m) | >50  | <b>&lt;1</b> | 3    | 3    |
| Chromium     | ppm    | ASTM D5185(m) | >15  | <b>0</b>     | 0    | 0    |
| Nickel       | ppm    | ASTM D5185(m) | >5   | <b>&lt;1</b> | <1   | 0    |
| Titanium     | ppm    | ASTM D5185(m) |      | <b>0</b>     | 0    | 0    |
| Silver       | ppm    | ASTM D5185(m) |      | <b>0</b>     | <1   | 0    |
| Aluminum     | ppm    | ASTM D5185(m) | >5   | <b>&lt;1</b> | 0    | 0    |
| Lead         | ppm    | ASTM D5185(m) | >10  | <b>0</b>     | <1   | 1    |
| Copper       | ppm    | ASTM D5185(m) | >50  | <b>3</b>     | 12   | 14   |
| Tin          | ppm    | ASTM D5185(m) | >5   | <b>0</b>     | 0    | 0    |
| Vanadium     | ppm    | ASTM D5185(m) |      | <b>0</b>     | 0    | 0    |
| White Metal  | scalar | Visual*       | NONE | <b>NONE</b>  | NONE | NONE |
| Yellow Metal | scalar | Visual*       | NONE | <b>NONE</b>  | NONE | NONE |

## CONTAMINATION

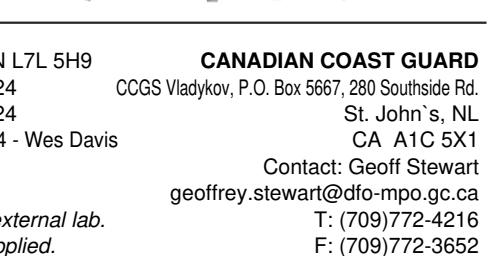
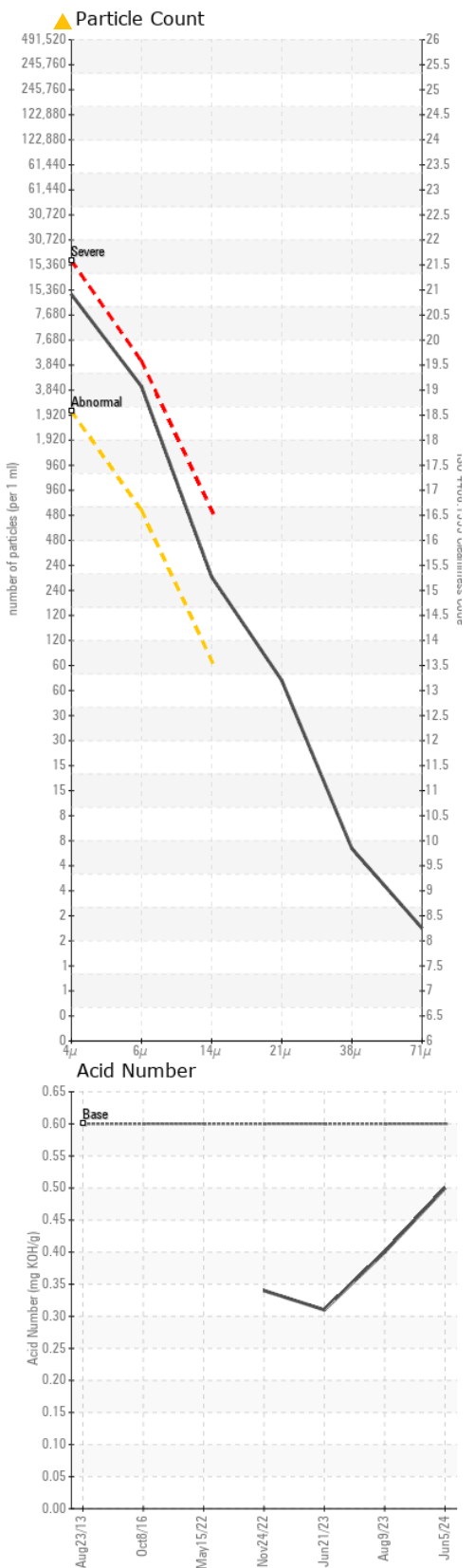
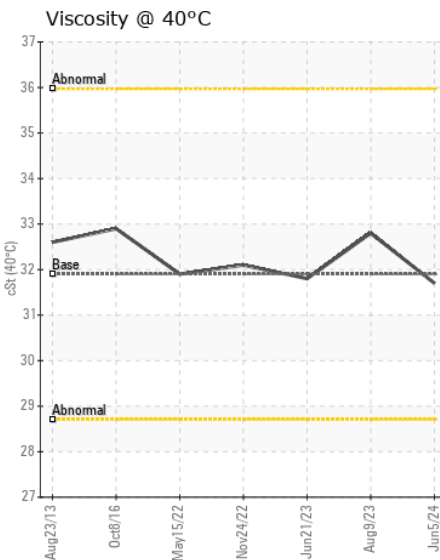
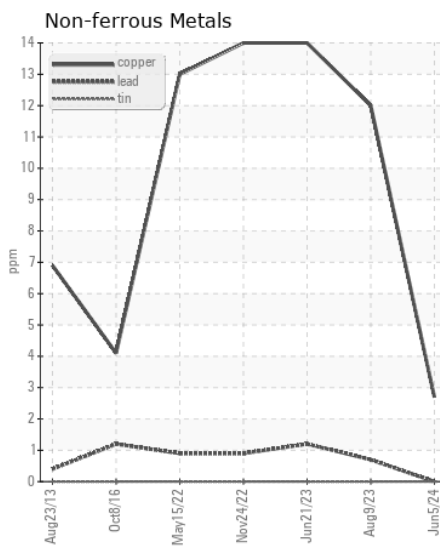
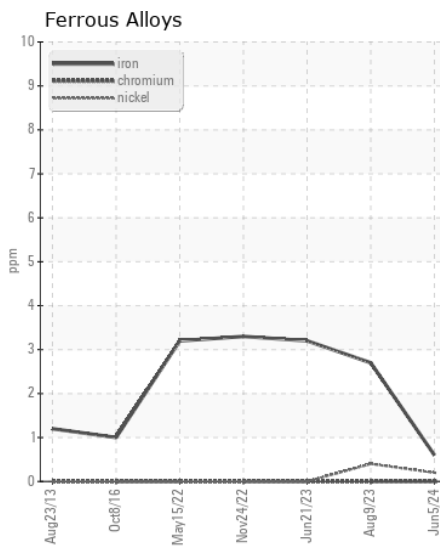
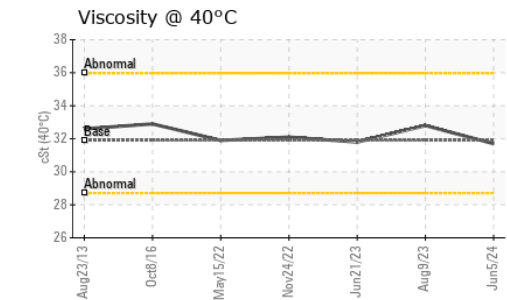
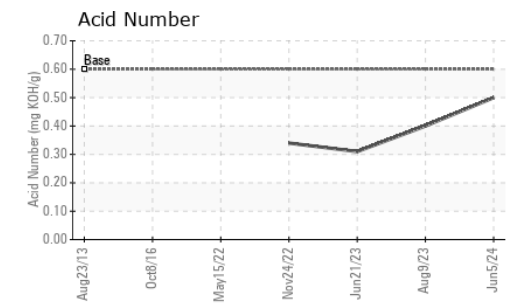
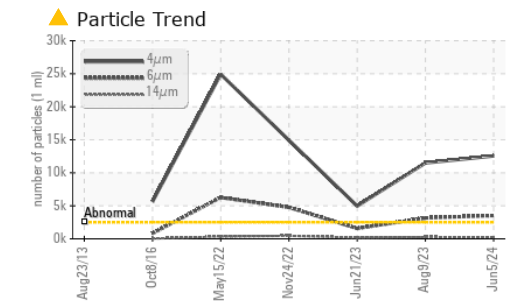
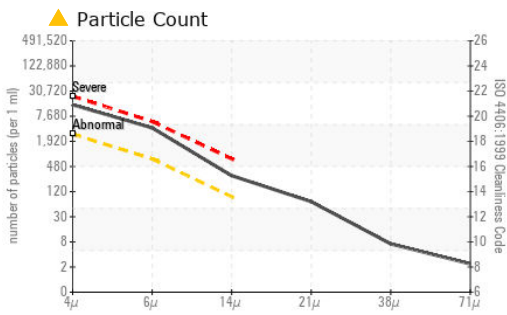
There is a moderate amount of particulates (2 to 100 microns in size) present in the fluid.

|                  |        |               |           |                   |            |            |
|------------------|--------|---------------|-----------|-------------------|------------|------------|
| Silicon          | ppm    | ASTM D5185(m) | >15       | <b>0</b>          | <1         | <1         |
| Potassium        | ppm    | ASTM D5185(m) | >20       | <b>&lt;1</b>      | <1         | <1         |
| Water            |        | WC Method     | >0.2      | <b>NEG</b>        | NEG        | NEG        |
| Particles >4µm   |        | ASTM D7647    | >2500     | <b>▲ 12549</b>    | ▲ 11492    | ▲ 4969     |
| Particles >6µm   |        | ASTM D7647    | >640      | <b>▲ 3523</b>     | ▲ 3157     | ▲ 1578     |
| Particles >14µm  |        | ASTM D7647    | >80       | <b>▲ 255</b>      | ▲ 267      | ▲ 171      |
| Particles >21µm  |        | ASTM D7647    | >20       | <b>▲ 61</b>       | ▲ 62       | ▲ 46       |
| Particles >38µm  |        | ASTM D7647    | >4        | <b>6</b>          | 2          | 2          |
| Particles >71µm  |        | ASTM D7647    | >3        | <b>2</b>          | 0          | 0          |
| Oil Cleanliness  |        | ISO 4406 (c)  | >18/16/13 | <b>▲ 21/19/15</b> | ▲ 21/19/15 | ▲ 19/18/15 |
| Silt             | scalar | Visual*       | NONE      | <b>NONE</b>       | NONE       | NONE       |
| Debris           | scalar | Visual*       | NONE      | <b>VLITE</b>      | VLITE      | VLITE      |
| 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*       | >0.2      | <b>NEG</b>        | NEG        | NEG        |

## FLUID CONDITION

The AN level is acceptable for this fluid. The fluid is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

|                  |          |               |      |              |      |      |
|------------------|----------|---------------|------|--------------|------|------|
| Sodium           | ppm      | ASTM D5185(m) |      | <b>&lt;1</b> | <1   | 1    |
| Boron            | ppm      | ASTM D5185(m) | 0    | <b>&lt;1</b> | <1   | <1   |
| Barium           | ppm      | ASTM D5185(m) | 0    | <b>&lt;1</b> | 4    | 0    |
| Molybdenum       | ppm      | ASTM D5185(m) | 0    | <b>0</b>     | 0    | 0    |
| Manganese        | ppm      | ASTM D5185(m) | 1    | <b>0</b>     | 0    | 0    |
| Magnesium        | ppm      | ASTM D5185(m) | 0    | <b>1</b>     | <1   | 1    |
| Calcium          | ppm      | ASTM D5185(m) | 50   | <b>45</b>    | 31   | 37   |
| Phosphorus       | ppm      | ASTM D5185(m) | 330  | <b>318</b>   | 390  | 362  |
| Zinc             | ppm      | ASTM D5185(m) | 430  | <b>403</b>   | 398  | 399  |
| Sulfur           | ppm      | ASTM D5185(m) | 760  | <b>790</b>   | 1043 | 947  |
| Acid Number (AN) | mg KOH/g | ASTM D974*    | 0.60 | <b>0.50</b>  | 0.40 | 0.31 |
| Visc @ 40°C      | cSt      | ASTM D7279(m) | 31.9 | <b>31.7</b>  | 32.8 | 31.8 |



ISO 17025:2017  
Accredited  
Laboratory

**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
**Sample No.** : WC0829982  
**Lab Number** : 02643279  
**Unique Number** : 5800818  
**Test Package** : MAR 2 ( Additional Tests: PrtCount, TAN Man )

**Received** : 20 Jun 2024  
**Tested** : 21 Jun 2024  
**Diagnosed** : 21 Jun 2024 - Wes Davis

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.

**CANADIAN COAST GUARD**  
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