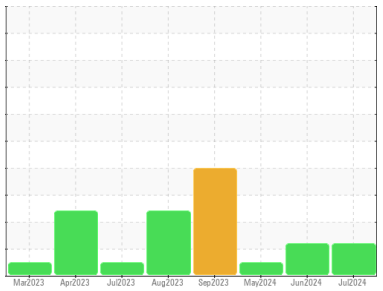
# OIL ANALYSIS REPORT

Sample Rating Trend




**DEGRADATION**

Machine Id
**HPCG1**
Component
**Propane Engine**
Fluid
**PETRO CANADA SENTRON LD 8000 (--- GAL)**

## DIAGNOSIS

**Recommendation**
The oil is near the end of it`s useful service life, recommend schedule an oil change. Resample at the next service interval to monitor.

**Wear**
All component wear rates are normal.

**Contamination**
There is no indication of any contamination in the oil.

**Fluid Condition**
The BN level is low. The condition of the oil is acceptable for the time in service.

| SAMPLE INFORMATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | **WC0793764** | WC0793762 | WC0793758 |
| Sample Date | | Client Info | | **03 Jul 2024** | 03 Jun 2024 | 02 May 2024 |
| Machine Age | hrs | Client Info | | **13348** | 12650 | 11910 |
| Oil Age | hrs | Client Info | | **2914** | 2216 | 1476 |
| Oil Changed | | Client Info | | **Not Changd** | Not Changd | Changed |
| Sample Status | | | | **ABNORMAL** | ABNORMAL | NORMAL |

| CONTAMINATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Water | | WC Method | >0.1 | **NEG** | NEG | NEG |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185m | >100 | **5** | 2 | 4 |
| Chromium | ppm | ASTM D5185m | >25 | **0** | 0 | <1 |
| Nickel | ppm | ASTM D5185m | >5 | **0** | 0 | <1 |
| Titanium | ppm | ASTM D5185m | | **0** | 0 | <1 |
| Silver | ppm | ASTM D5185m | >5 | **0** | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >20 | **2** | 2 | 2 |
| Lead | ppm | ASTM D5185m | >25 | **0** | 0 | <1 |
| Copper | ppm | ASTM D5185m | >35 | **0** | <1 | <1 |
| Tin | ppm | ASTM D5185m | >8 | **2** | 2 | 2 |
| Vanadium | ppm | ASTM D5185m | | **0** | 0 | <1 |
| Cadmium | ppm | ASTM D5185m | | **0** | 0 | <1 |

| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185m | | **0** | <1 | 0 |
| Barium | ppm | ASTM D5185m | | **0** | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | | **0** | 0 | 1 |
| Manganese | ppm | ASTM D5185m | | **0** | <1 | <1 |
| Magnesium | ppm | ASTM D5185m | | **17** | 8 | 9 |
| Calcium | ppm | ASTM D5185m | 1351 | **1543** | 1600 | 1497 |
| Phosphorus | ppm | ASTM D5185m | 302 | **307** | 328 | 300 |
| Zinc | ppm | ASTM D5185m | 358 | **384** | 403 | 384 |
| Sulfur | ppm | ASTM D5185m | 2758 | **3355** | 3644 | 3391 |

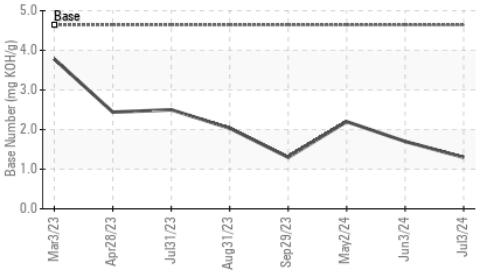
| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | >50 | **2** | 2 | 2 |
| Sodium | ppm | ASTM D5185m | | **3** | 3 | 0 |
| Potassium | ppm | ASTM D5185m | >20 | **1** | 2 | 3 |

| INFRA-RED | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Soot % | % | *ASTM D7844 | | **0** | 0 | 0 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | **7.2** | 6.6 | 5.9 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | **19.3** | 18.6 | 18.2 |

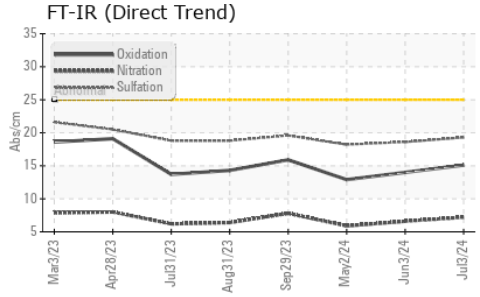
| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | **15.1** | 14.0 | 12.9 |
| Acid Number (AN) | mg KOH/g | ASTM D8045 | 0.86 | **---** | 1.75 | --- |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 4.64 | **1.3** | 1.7 | 2.2 |

# OIL ANALYSIS REPORT

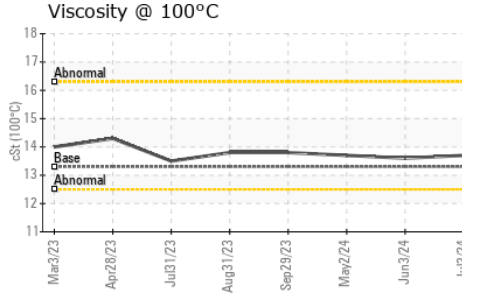
Base Number



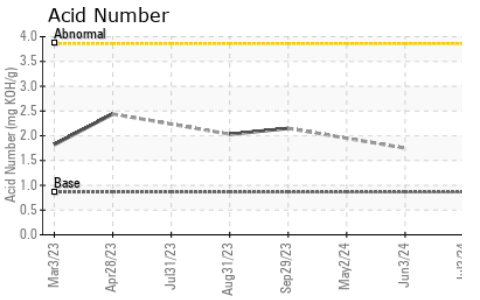

FT-IR (Direct Trend)




Viscosity @ 100°C




Acid Number

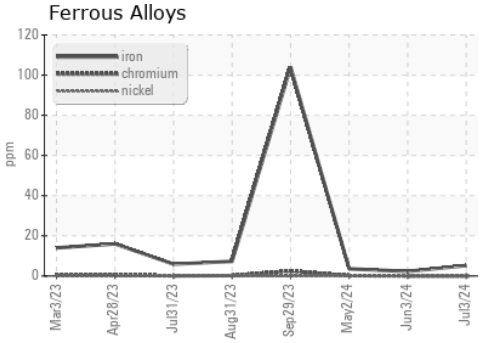



| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| 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 |
| Free Water | scalar | *Visual | | **NEG** | NEG | NEG |

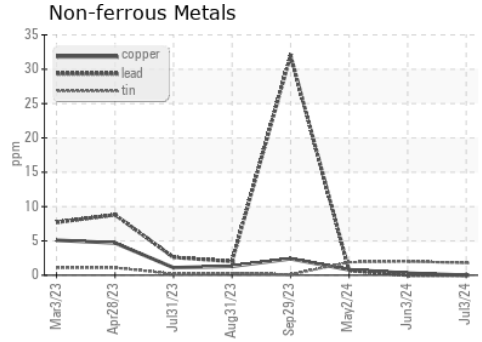
| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 100°C | cSt | ASTM D445 | 13.3 | **13.7** | 13.6 | 13.7 |

## GRAPHS

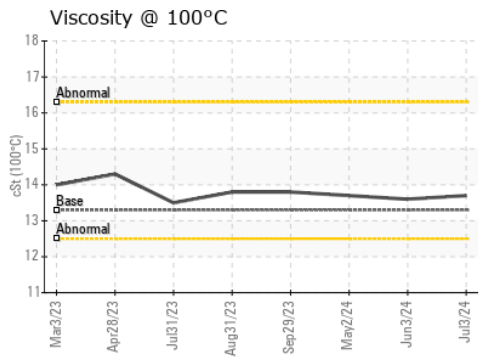
Ferrous Alloys



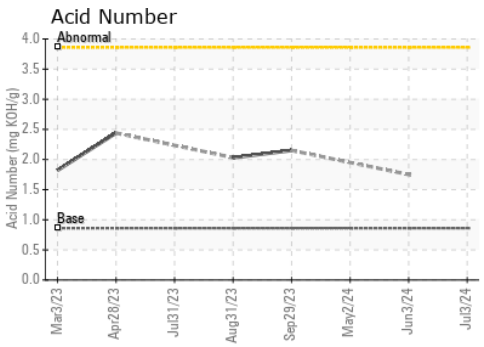

Non-ferrous Metals




Viscosity @ 100°C




Acid Number




Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : WC0793764
**Lab Number** : 06237289
**Unique Number** : 11126123
**Test Package** : FLEET

**Received** : 15 Jul 2024
**Tested** : 18 Jul 2024
**Diagnosed** : 18 Jul 2024 - Jonathan Hester

*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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