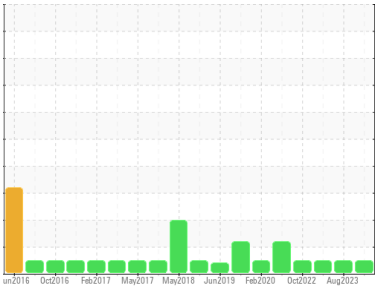
# OIL ANALYSIS REPORT

Sample Rating Trend




NORMAL

Machine Id
**3703**
Component
**Diesel Engine**
Fluid
**PETRO CANADA DURON SHP 15W40 (8 GAL)**

## DIAGNOSIS

**Recommendation**
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 result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

| SAMPLE INFORMATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | **GFL0098786** | GFL0072374 | GFL0070493 |
| Sample Date | | Client Info | | **31 Oct 2023** | 17 Aug 2023 | 09 May 2023 |
| Machine Age | hrs | Client Info | | **9961** | 0 | 9961 |
| Oil Age | hrs | Client Info | | **9961** | 332 | 9961 |
| Oil Changed | | Client Info | | **N/A** | Not Changd | N/A |
| Sample Status | | | | **NORMAL** | NORMAL | NORMAL |

| CONTAMINATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Fuel | | WC Method | >3.0 | **<1.0** | <1.0 | <1.0 |
| Glycol | | WC Method | | **NEG** | NEG | NEG |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185m | >75 | **59** | 47 | 15 |
| Chromium | ppm | ASTM D5185m | >5 | **3** | 2 | 1 |
| Nickel | ppm | ASTM D5185m | >4 | **<1** | <1 | <1 |
| Titanium | ppm | ASTM D5185m | >2 | **0** | 0 | 0 |
| Silver | ppm | ASTM D5185m | >2 | **0** | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >15 | **2** | 2 | 2 |
| Lead | ppm | ASTM D5185m | >25 | **0** | 0 | 0 |
| Copper | ppm | ASTM D5185m | >100 | **1** | 2 | <1 |
| Tin | ppm | ASTM D5185m | >4 | **<1** | <1 | 0 |
| Vanadium | ppm | ASTM D5185m | | **<1** | <1 | 0 |
| Cadmium | ppm | ASTM D5185m | | **0** | 0 | 0 |

| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185m | 0 | **13** | 1 | 3 |
| Barium | ppm | ASTM D5185m | 0 | **0** | 0 | 2 |
| Molybdenum | ppm | ASTM D5185m | 60 | **69** | 67 | 62 |
| Manganese | ppm | ASTM D5185m | 0 | **<1** | <1 | <1 |
| Magnesium | ppm | ASTM D5185m | 1010 | **1028** | 999 | 902 |
| Calcium | ppm | ASTM D5185m | 1070 | **1240** | 1267 | 1128 |
| Phosphorus | ppm | ASTM D5185m | 1150 | **1135** | 1096 | 1029 |
| Zinc | ppm | ASTM D5185m | 1270 | **1425** | 1309 | 1199 |
| Sulfur | ppm | ASTM D5185m | 2060 | **3296** | 3668 | 2903 |

| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | >25 | **6** | 7 | 6 |
| Sodium | ppm | ASTM D5185m | | **15** | 65 | 2 |
| Potassium | ppm | ASTM D5185m | >20 | **4** | 2 | 2 |

| INFRA-RED | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Soot % | % | *ASTM D7844 | >6 | **2.4** | 1.2 | 0.4 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | **12.0** | 9.5 | 8.4 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | **25.2** | 21.8 | 20.2 |

| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | **20.0** | 16.7 | 17.0 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 9.8 | **6.7** | 7.9 | 8.6 |

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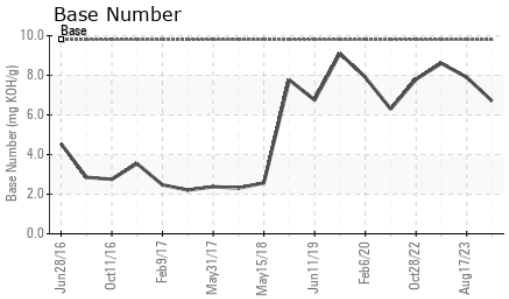
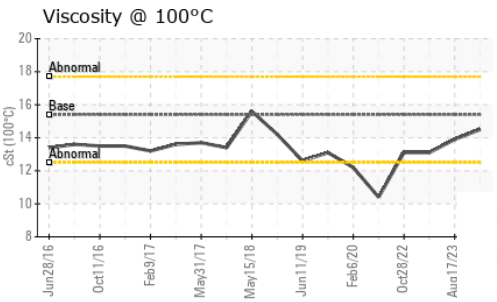
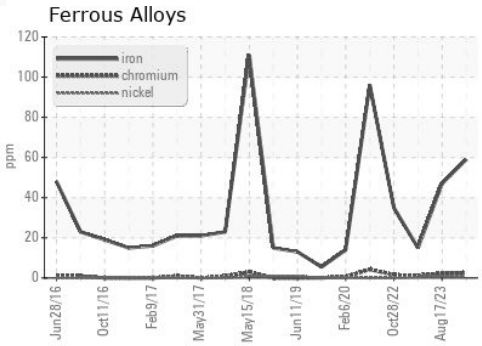


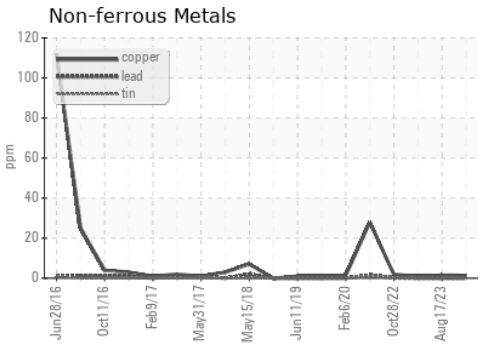



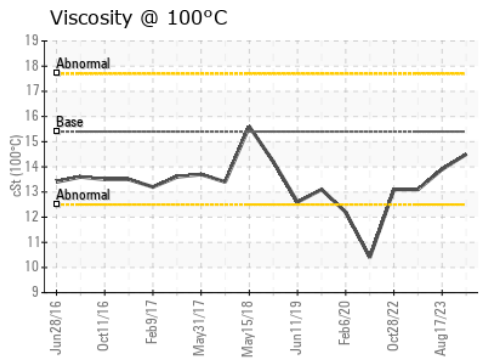

| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| 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 | >0.2 | **NEG** | NEG | NEG |
| Free Water | scalar | *Visual | | **NEG** | NEG | NEG |

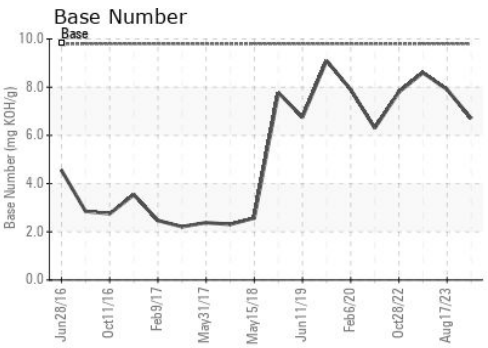
| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 100°C | cSt | ASTM D445 | 15.4 | **14.5** | 13.9 | 13.1 |

## GRAPHS




ANAB ACCREDITED ISO/IEC 17025 TESTING LABORATORY
Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : GFL0098786
**Lab Number** : 05998816
**Unique Number** : 10727176
**Test Package** : FLEET

**Received** : 06 Nov 2023
**Diagnosed** : 07 Nov 2023
**Diagnostician** : Wes Davis

*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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