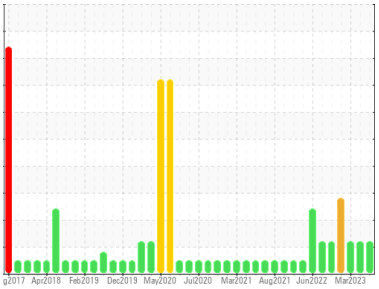
# PROBLEM SUMMARY

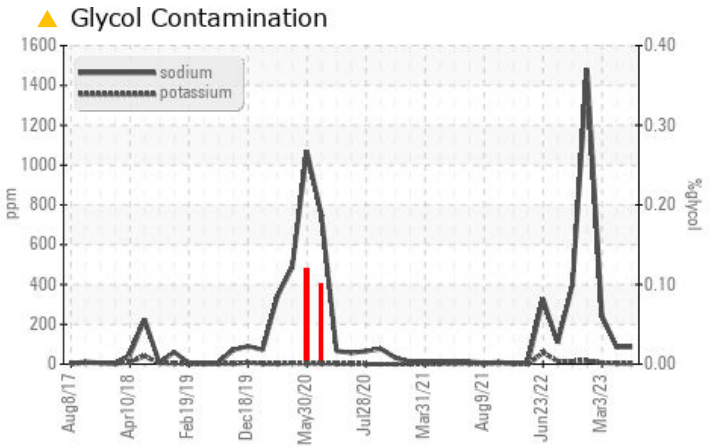
**Sample Rating Trend**



**GLYCOL**

Machine Id
**10794**
Component
**Diesel Engine**
Fluid
**PETRO CANADA DURON SHP 15W40 (11 GAL)**

## COMPONENT CONDITION SUMMARY




## RECOMMENDATION

No corrective action is recommended at this time. Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

## PROBLEMATIC TEST RESULTS

| Sample Status | | | | **ATTENTION** | ATTENTION | ATTENTION |
|---|---|---|---|---|---|---|
| Sodium | ppm | ASTM D5185m | | ▲ **84** | ▲ 84 | ▲ 244 |

**Customer Id:** GFL095
**Sample No.:** GFL0083645
**Lab Number:** 05893450
**Test Package:** FLEET

*To manage this report scan the QR code*

*To discuss the diagnosis or test data:*
Sean Felton +1 919-379-4092
sfelton@wearcheckusa.com

*To change component or sample information:*
Customer Service +1 1-800-237-1369
customerservice@wearcheck.com

## RECOMMENDED ACTIONS

| Action | Status | Date | Done By | Description |
|---|---|---|---|---|
| Change Fluid | --- | --- | ? | Oil and filter change at the time of sampling has been noted. |
| Change Filter | --- | --- | ? | Oil and filter change at the time of sampling has been noted. |

## HISTORICAL DIAGNOSIS

**29 Jun 2023 Diag: Angela Borella**

GLYCOL

No corrective action is recommended at this time. Resample at the next service interval to monitor.All component wear rates are normal. Sodium and/or potassium levels remain high. Test for glycol is negative. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

view report

**03 Mar 2023 Diag: Jonathan Hester**

GLYCOL

No corrective action is recommended at this time. Resample at the next service interval to monitor.All component wear rates are normal. Sodium and/or potassium levels remain high. Test for glycol is negative. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

view report

**18 Jan 2023 Diag: Jonathan Hester**

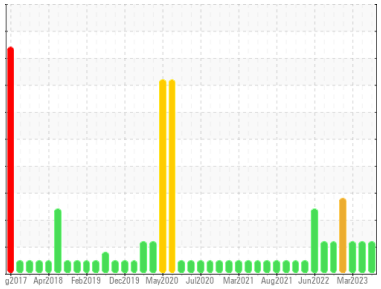
DIRT

We advise that you check for the source of the coolant leak. Check for low coolant level. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition.All component wear rates are normal. Sodium and/or potassium levels are high. Elemental level of silicon (Si) above normal indicating ingress of seal material. The BN result indicates that there is suitable alkalinity remaining in the oil.

view report

# OIL ANALYSIS REPORT

Sample Rating Trend



**GLYCOL**

Machine Id
**10794**
Component
**Diesel Engine**
Fluid
**PETRO CANADA DURON SHP 15W40 (11 GAL)**

## DIAGNOSIS

**Recommendation**

No corrective action is recommended at this time. Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

**Wear**

All component wear rates are normal.

**Contamination**

Sodium and/or potassium levels are high. Test for glycol is negative.

**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 | history 1 | history 2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | **GFL0083645** | GFL0083640 | GFL0074557 |
| Sample Date | | Client Info | | **04 Jul 2023** | 29 Jun 2023 | 03 Mar 2023 |
| Machine Age | hrs | Client Info | | **15733** | 15726 | 14968 |
| Oil Age | hrs | Client Info | | **489** | 474 | 0 |
| Oil Changed | | Client Info | | **Changed** | Not Changd | Not Changd |
| Sample Status | | | | **ATTENTION** | ATTENTION | ATTENTION |

| CONTAMINATION | | method | limit/base | current | history 1 | history 2 |
|---|---|---|---|---|---|---|
| Fuel | | WC Method | >3.0 | **<1.0** | <1.0 | <1.0 |

| WEAR METALS | | method | limit/base | current | history 1 | history 2 |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185m | >75 | **46** | 43 | 21 |
| Chromium | ppm | ASTM D5185m | >5 | **2** | 1 | <1 |
| Nickel | ppm | ASTM D5185m | >4 | **<1** | <1 | 0 |
| Titanium | ppm | ASTM D5185m | >2 | **0** | 0 | <1 |
| Silver | ppm | ASTM D5185m | >2 | **<1** | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >15 | **2** | 3 | 4 |
| Lead | ppm | ASTM D5185m | >25 | **2** | 2 | <1 |
| Copper | ppm | ASTM D5185m | >100 | **1** | 1 | <1 |
| Tin | ppm | ASTM D5185m | >4 | **<1** | <1 | 0 |
| Vanadium | ppm | ASTM D5185m | | **0** | 0 | 0 |
| Cadmium | ppm | ASTM D5185m | | **0** | 0 | 0 |

| ADDITIVES | | method | limit/base | current | history 1 | history 2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185m | 0 | **4** | 4 | 8 |
| Barium | ppm | ASTM D5185m | 0 | **0** | 2 | 0 |
| Molybdenum | ppm | ASTM D5185m | 60 | **72** | 71 | 74 |
| Manganese | ppm | ASTM D5185m | 0 | **<1** | <1 | <1 |
| Magnesium | ppm | ASTM D5185m | 1010 | **848** | 799 | 884 |
| Calcium | ppm | ASTM D5185m | 1070 | **1116** | 1092 | 1132 |
| Phosphorus | ppm | ASTM D5185m | 1150 | **996** | 977 | 999 |
| Zinc | ppm | ASTM D5185m | 1270 | **1185** | 1147 | 1225 |
| Sulfur | ppm | ASTM D5185m | 2060 | **2717** | 2753 | 3068 |

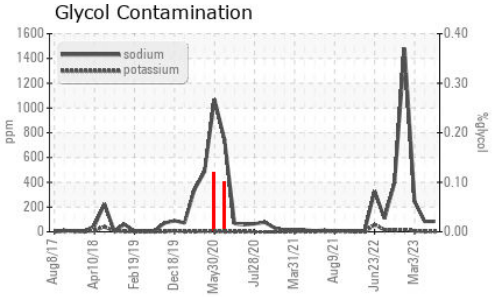
| CONTAMINANTS | | method | limit/base | current | history 1 | history 2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | >25 | **15** | 9 | 11 |
| Sodium | ppm | ASTM D5185m | | ▲ **84** | ▲ 84 | ▲ 244 |
| Potassium | ppm | ASTM D5185m | >20 | **4** | 4 | 7 |
| Glycol | % | *ASTM D2982 | | **NEG** | NEG | NEG |

| INFRA-RED | | method | limit/base | current | history 1 | history 2 |
|---|---|---|---|---|---|---|
| Soot % | % | *ASTM D7844 | >6 | **1.2** | 0.6 | 0.6 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | **12.6** | 11.0 | 11.1 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | **25.3** | 24.3 | 22.2 |

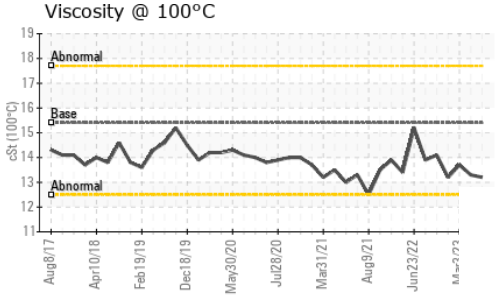
| FLUID DEGRADATION | | method | limit/base | current | history 1 | history 2 |
|---|---|---|---|---|---|---|
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | **21.8** | 25.7 | 18.6 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 9.8 | **6.0** | 5.8 | 7.7 |

# OIL ANALYSIS REPORT

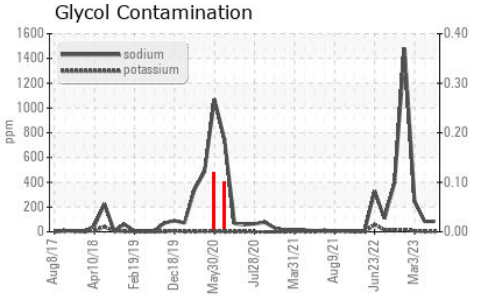
Glycol Contamination




Viscosity @ 100°C




Glycol Contamination

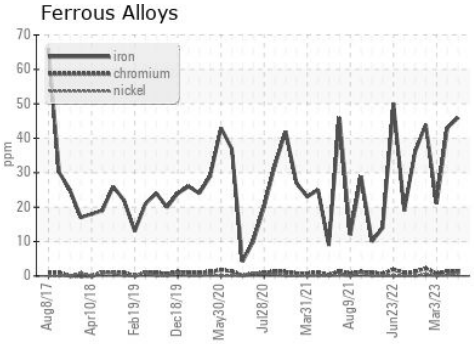



| VISUAL | | method | limit/base | current | history 1 | history 2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| 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 |

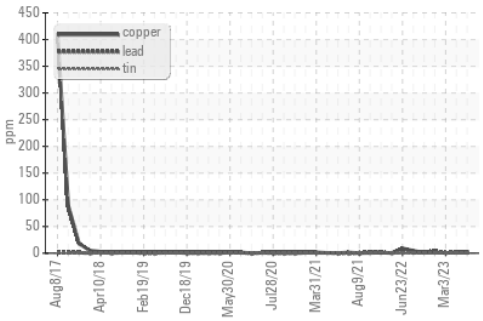
| FLUID PROPERTIES | | method | limit/base | current | history 1 | history 2 |
|---|---|---|---|---|---|---|
| Visc @ 100°C | cSt | ASTM D445 | 15.4 | **13.2** | 13.3 | 13.7 |

## GRAPHS

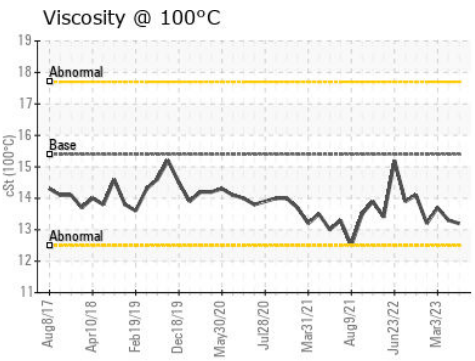
Ferrous Alloys



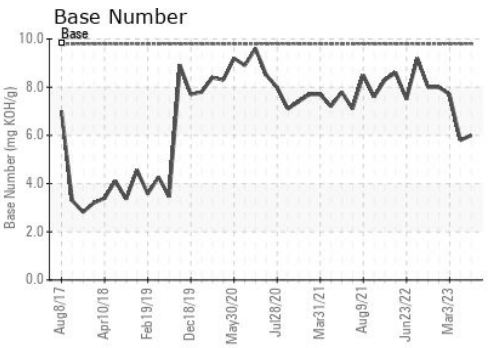

Non-ferrous Metals




Viscosity @ 100°C




Base Number




Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : GFL0083645 **Received** : 10 Jul 2023
**Lab Number** : 05893450 **Diagnosed** : 11 Jul 2023
**Unique Number** : 10549260 **Diagnostician** : Sean Felton
**Test Package** : FLEET ( Additional Tests: Glycol )

*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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