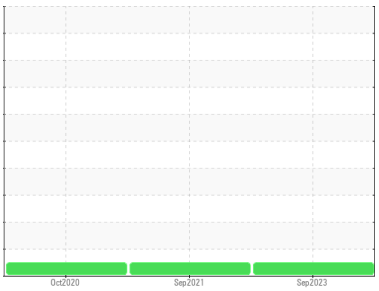
OIL DIAGNOSTICS

# OIL ANALYSIS REPORT

Sample Rating Trend




NORMAL

Machine Id
**796739**
Component
**Diesel Engine**
Fluid
**PETRO CANADA DURON SHP 10W30 (--- GAL)**

## DIAGNOSIS

**Recommendation**
Resample at the next service interval to monitor. Please specify the component make and model with your next sample.

**Wear**
Metal levels are typical for a new component breaking in.

**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 | | **PCA0105291** | PCA0057170 | PCA0026165 |
| Sample Date | | Client Info | | **18 Sep 2023** | 13 Sep 2021 | 26 Oct 2020 |
| Machine Age | mls | Client Info | | **33369** | 0 | 232200 |
| Oil Age | mls | Client Info | | **33369** | 0 | 40000 |
| Oil Changed | | Client Info | | **Changed** | Changed | Changed |
| Sample Status | | | | **NORMAL** | NORMAL | NORMAL |

| CONTAMINATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Fuel | | WC Method | >5 | **<1.0** | <1.0 | <1.0 |
| Glycol | | WC Method | | **NEG** | NEG | NEG |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185m | >100 | **26** | 35 | 16 |
| Chromium | ppm | ASTM D5185m | >20 | **1** | 2 | 1 |
| Nickel | ppm | ASTM D5185m | >4 | **<1** | <1 | 1 |
| Titanium | ppm | ASTM D5185m | | **0** | 27 | <1 |
| Silver | ppm | ASTM D5185m | >3 | **0** | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >20 | **6** | 7 | 4 |
| Lead | ppm | ASTM D5185m | >40 | **<1** | 0 | 2 |
| Copper | ppm | ASTM D5185m | >330 | **7** | 11 | 6 |
| Tin | ppm | ASTM D5185m | >15 | **<1** | 1 | 3 |
| Antimony | ppm | ASTM D5185m | | **---** | 0 | 0 |
| Vanadium | ppm | ASTM D5185m | | **<1** | <1 | 0 |
| Cadmium | ppm | ASTM D5185m | | **0** | 0 | 0 |

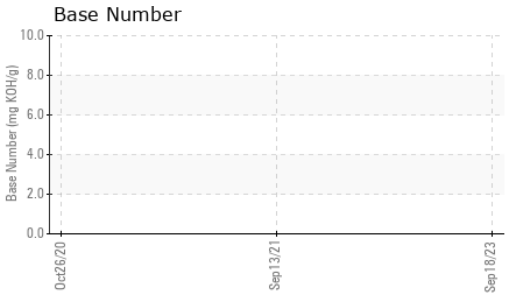
| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185m | 2 | **2** | 6 | 3 |
| Barium | ppm | ASTM D5185m | 0 | **0** | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | 50 | **64** | 45 | 57 |
| Manganese | ppm | ASTM D5185m | 0 | **<1** | <1 | <1 |
| Magnesium | ppm | ASTM D5185m | 950 | **1068** | 731 | 1005 |
| Calcium | ppm | ASTM D5185m | 1050 | **1261** | 1480 | 1071 |
| Phosphorus | ppm | ASTM D5185m | 995 | **1117** | 994 | 943 |
| Zinc | ppm | ASTM D5185m | 1180 | **1406** | 1260 | 1147 |
| Sulfur | ppm | ASTM D5185m | 2600 | **3209** | 2518 | 2127 |

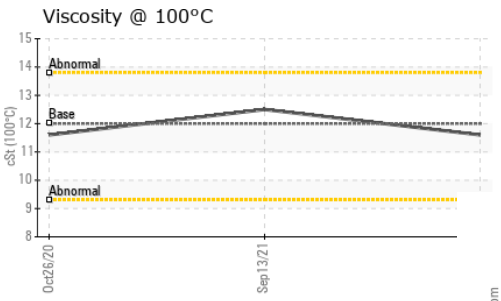
| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | >25 | **4** | 7 | 4 |
| Sodium | ppm | ASTM D5185m | | **3** | 3 | 2 |
| Potassium | ppm | ASTM D5185m | >20 | **4** | 9 | 4 |

| INFRA-RED | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Soot % | % | *ASTM D7844 | >3 | **0.4** | 1.4 | 0.6 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | **7.8** | 12.5 | 9 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | **19.4** | 27.8 | 20.9 |

| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | **15.2** | 23.4 | 17.2 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | | **8.5** | --- | --- |

# OIL ANALYSIS REPORT

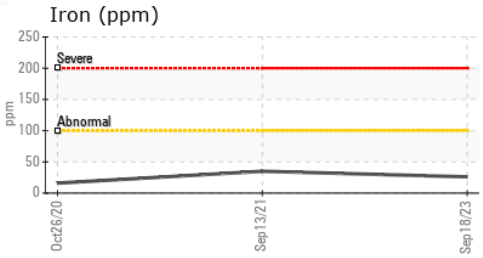


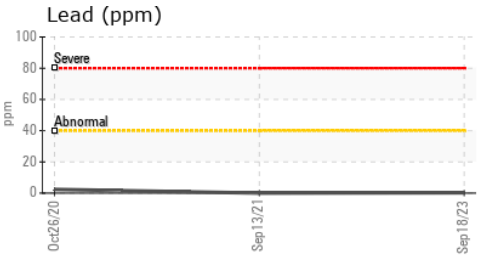



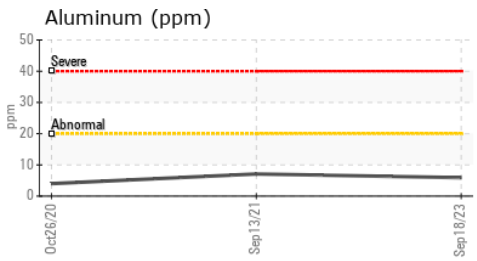

| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | **NONE** | NONE | NONE |
|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

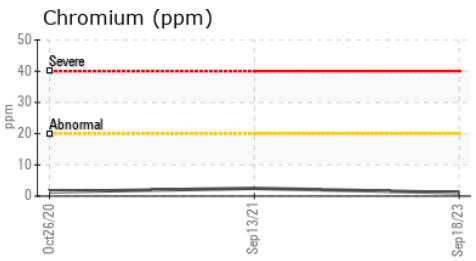
| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 100°C | cSt | ASTM D445 | 12.00 | **11.6** | 12.5 | 11.6 |

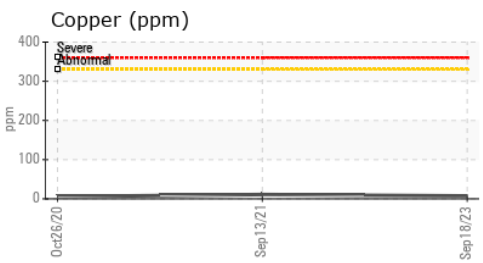
## GRAPHS

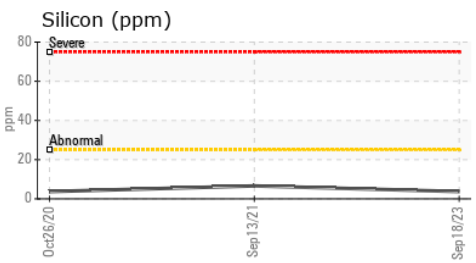


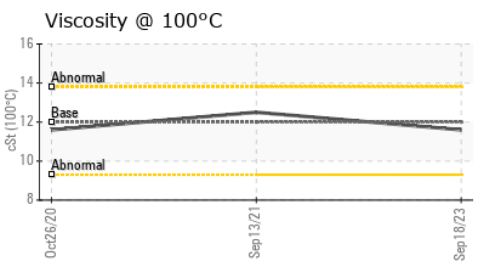



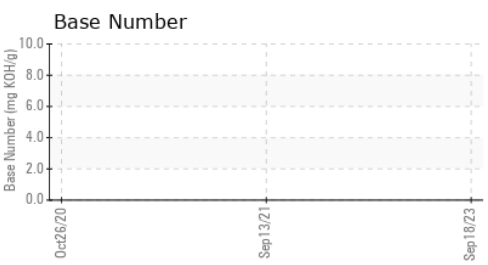




**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : PCA0105291 **Received** : 04 Oct 2023
**Lab Number** : 05968743 **Diagnosed** : 04 Oct 2023
**Unique Number** : 10675294 **Diagnostician** : Wes Davis
**Test Package** : MOB 1 ( Additional Tests: TBN )

Certificate L2367

*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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