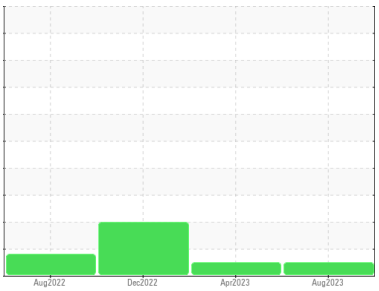
OIL DIAGNOSTICS

# OIL ANALYSIS REPORT

Sample Rating Trend




NORMAL

Machine Id
**621525**
Component
**Diesel Engine**
Fluid
**PETRO CANADA DURON SHP 10W30 (--- QTS)**

## DIAGNOSIS

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

**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 | | **PCA0104224** | PCA0095926 | PCA0083573 |
| Sample Date | | Client Info | | **24 Aug 2023** | 07 Apr 2023 | 12 Dec 2022 |
| Machine Age | mls | Client Info | | **134740** | 102987 | 75525 |
| Oil Age | mls | Client Info | | **0** | 0 | 0 |
| Oil Changed | | Client Info | | **Changed** | Not Changd | Changed |
| Sample Status | | | | **NORMAL** | NORMAL | ABNORMAL |

| 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 | **55** | 40 | 82 |
| Chromium | ppm | ASTM D5185m | >20 | **2** | 2 | 6 |
| Nickel | ppm | ASTM D5185m | >4 | **0** | 0 | 0 |
| Titanium | ppm | ASTM D5185m | | **0** | 0 | <1 |
| Silver | ppm | ASTM D5185m | >3 | **<1** | 0 | <1 |
| Aluminum | ppm | ASTM D5185m | >20 | **17** | 13 | 42 |
| Lead | ppm | ASTM D5185m | >40 | **0** | 0 | <1 |
| Copper | ppm | ASTM D5185m | >330 | **102** | 130 | ▲ 419 |
| Tin | ppm | ASTM D5185m | >15 | **3** | 2 | 7 |
| Vanadium | ppm | ASTM D5185m | | **0** | 0 | 0 |
| Cadmium | ppm | ASTM D5185m | | **0** | 0 | 0 |

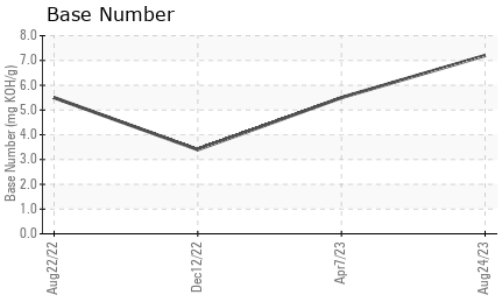
| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185m | 2 | **14** | 9 | 4 |
| Barium | ppm | ASTM D5185m | 0 | **0** | 2 | 2 |
| Molybdenum | ppm | ASTM D5185m | 50 | **55** | 57 | 41 |
| Manganese | ppm | ASTM D5185m | 0 | **2** | 2 | 5 |
| Magnesium | ppm | ASTM D5185m | 950 | **782** | 776 | 511 |
| Calcium | ppm | ASTM D5185m | 1050 | **1362** | 1227 | 1830 |
| Phosphorus | ppm | ASTM D5185m | 995 | **970** | 839 | 801 |
| Zinc | ppm | ASTM D5185m | 1180 | **1271** | 1099 | 975 |
| Sulfur | ppm | ASTM D5185m | 2600 | **2724** | 2188 | 2245 |

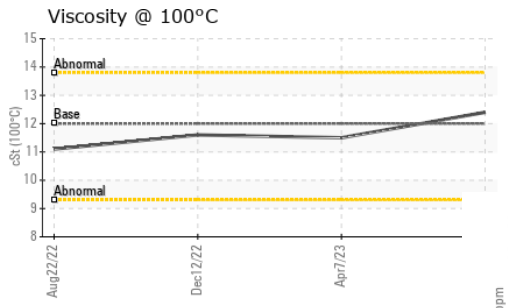
| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | >25 | **6** | 5 | 8 |
| Sodium | ppm | ASTM D5185m | | **3** | 2 | 6 |
| Potassium | ppm | ASTM D5185m | >20 | **31** | 30 | 122 |

| INFRA-RED | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Soot % | % | *ASTM D7844 | >3 | **1.1** | 0.8 | 1.6 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | **10.7** | 9.3 | 17.9 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | **22.7** | 20.0 | 31.0 |

| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | **20.4** | 19.2 | 35.8 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | | **7.2** | 5.5 | ▲ 3.4 |

# OIL ANALYSIS REPORT

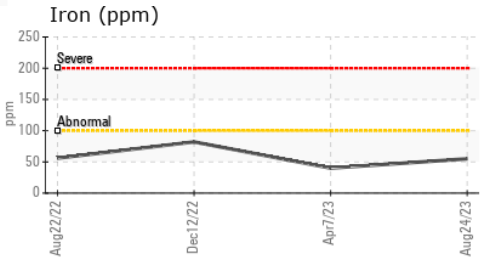


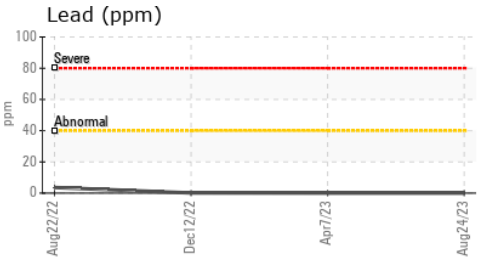



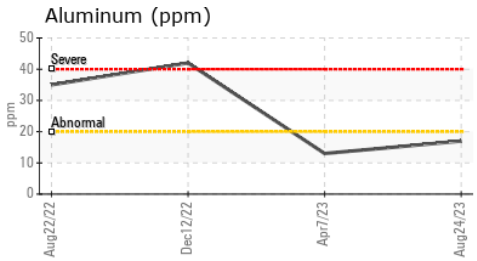

| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | **NONE** | NONE | NONE |
|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

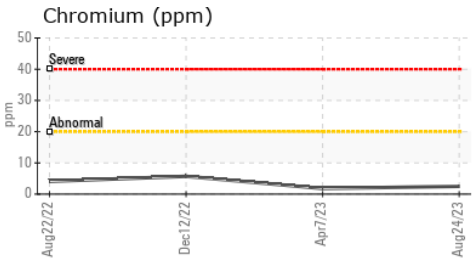
| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 100°C | cSt | ASTM D445 | 12.00 | **12.4** | 11.5 | 11.6 |

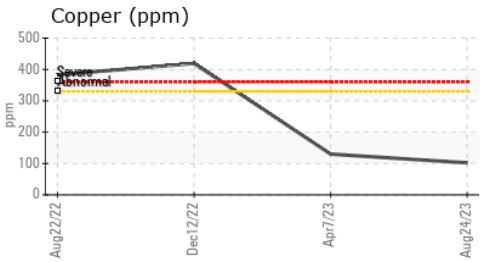
## GRAPHS

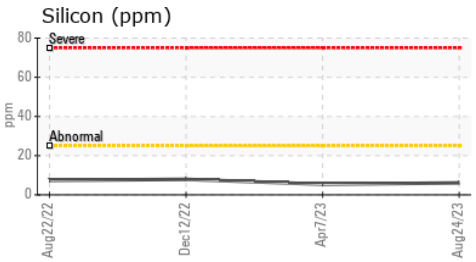


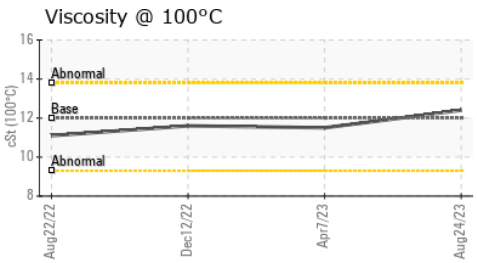



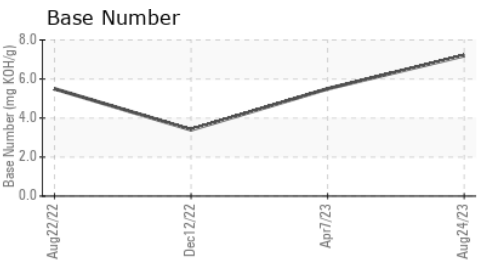




ANAB ACCREDITED ISO/IEC 17025 TESTING LABORATORY
Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : PCA0104224 **Received** : 30 Aug 2023
**Lab Number** : 05938613 **Diagnosed** : 31 Aug 2023
**Unique Number** : 10629225 **Diagnostician** : Wes Davis
**Test Package** : MOB 1 ( Additional Tests: TBN )

*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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