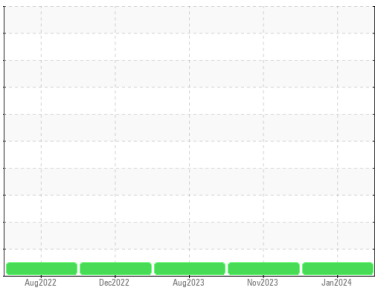
OIL DIAGNOSTICS

# OIL ANALYSIS REPORT

Sample Rating Trend




NORMAL

Machine Id
**624566**
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 | | **PCA0093363** | PCA0093334 | PCA0093328 |
| Sample Date | | Client Info | | **29 Jan 2024** | 27 Nov 2023 | 10 Aug 2023 |
| Machine Age | mls | Client Info | | **122954** | 113913 | 96945 |
| Oil Age | mls | Client Info | | **0** | 0 | 0 |
| Oil Changed | | Client Info | | **Changed** | Not Changd | Not Changd |
| Sample Status | | | | **NORMAL** | NORMAL | NORMAL |

| CONTAMINATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Fuel | | WC Method | >5 | **<1.0** | <1.0 | <1.0 |
| Water | | WC Method | >0.2 | **NEG** | NEG | NEG |
| Glycol | | WC Method | | **NEG** | NEG | NEG |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185m | >100 | **29** | 28 | 15 |
| Chromium | ppm | ASTM D5185m | >20 | **2** | 3 | 2 |
| Nickel | ppm | ASTM D5185m | >4 | **<1** | 1 | 0 |
| Titanium | ppm | ASTM D5185m | | **6** | 7 | 6 |
| Silver | ppm | ASTM D5185m | >3 | **0** | 0 | <1 |
| Aluminum | ppm | ASTM D5185m | >20 | **7** | 6 | 4 |
| Lead | ppm | ASTM D5185m | >40 | **<1** | <1 | <1 |
| Copper | ppm | ASTM D5185m | >330 | **63** | 71 | 88 |
| Tin | ppm | ASTM D5185m | >15 | **2** | 3 | 2 |
| Vanadium | ppm | ASTM D5185m | | **<1** | <1 | <1 |
| Cadmium | ppm | ASTM D5185m | | **0** | <1 | 0 |

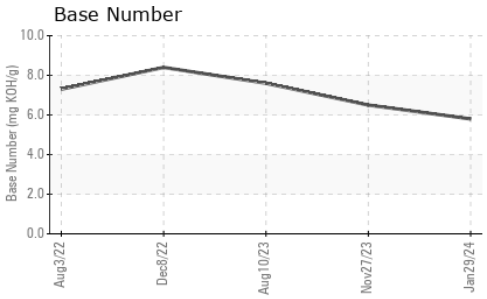
| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185m | 2 | **2** | 3 | 5 |
| Barium | ppm | ASTM D5185m | 0 | **0** | 12 | 0 |
| Molybdenum | ppm | ASTM D5185m | 50 | **59** | 62 | 57 |
| Manganese | ppm | ASTM D5185m | 0 | **<1** | 1 | <1 |
| Magnesium | ppm | ASTM D5185m | 950 | **941** | 906 | 914 |
| Calcium | ppm | ASTM D5185m | 1050 | **1198** | 1194 | 1242 |
| Phosphorus | ppm | ASTM D5185m | 995 | **872** | 875 | 957 |
| Zinc | ppm | ASTM D5185m | 1180 | **1254** | 1209 | 1230 |
| Sulfur | ppm | ASTM D5185m | 2600 | **2453** | 2568 | 3349 |

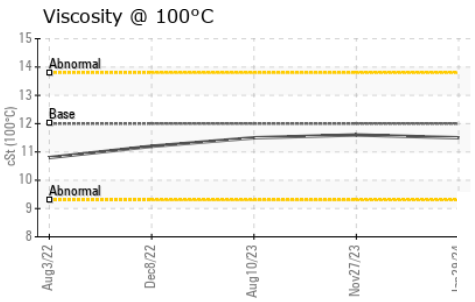
| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | >25 | **5** | 4 | 3 |
| Sodium | ppm | ASTM D5185m | | **3** | <1 | 3 |
| Potassium | ppm | ASTM D5185m | >20 | **12** | 15 | 11 |

| INFRA-RED | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Soot % | % | *ASTM D7844 | >3 | **0.9** | 0.8 | 0.5 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | **9.9** | 9.4 | 7.5 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | **21.5** | 21.2 | 19.0 |

| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | **17.3** | 16.8 | 14.4 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | | **5.8** | 6.5 | 7.6 |

# OIL ANALYSIS REPORT

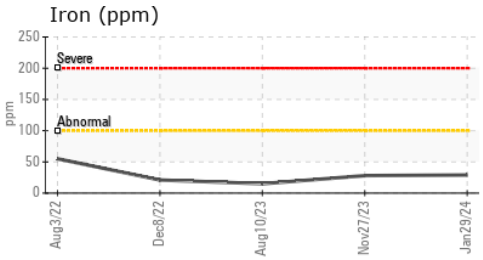


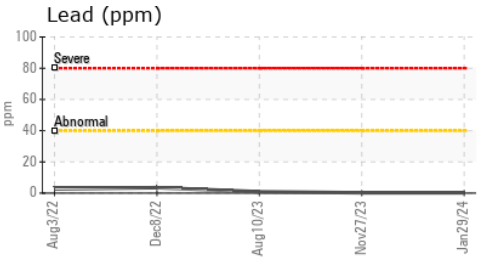



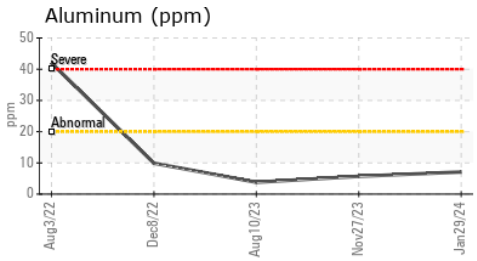

| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | **NONE** | NONE | NONE |
|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

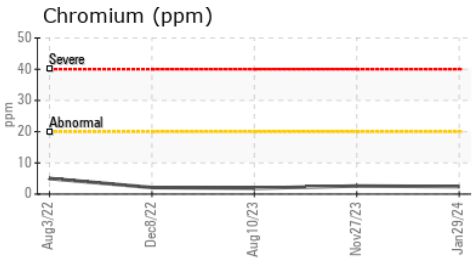
| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 100°C | cSt | ASTM D445 | 12.00 | **11.5** | 11.6 | 11.5 |

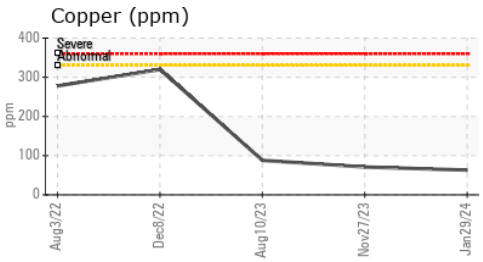
## GRAPHS

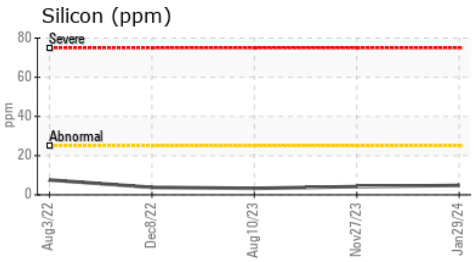


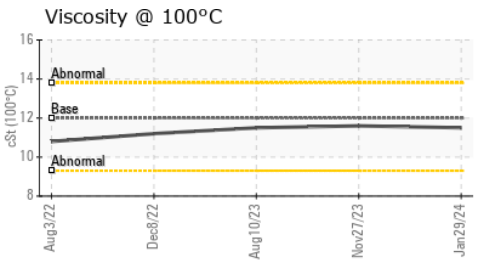



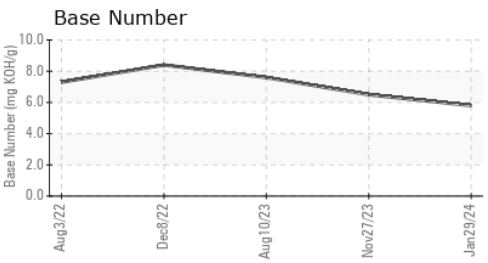




**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : PCA0093363
**Lab Number** : 06092677
**Unique Number** : 10885530
**Test Package** : MOB 1 ( Additional Tests: TBN )

**Received** : 19 Feb 2024
**Tested** : 20 Feb 2024
**Diagnosed** : 20 Feb 2024 - Wes Davis

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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