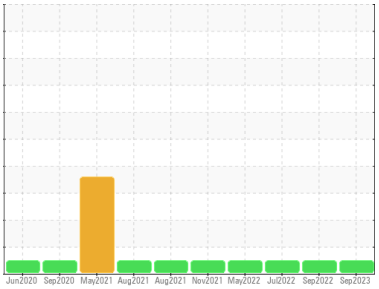
OIL DIAGNOSTICS

# OIL ANALYSIS REPORT

Sample Rating Trend




NORMAL

Machine Id
**513**
Component
**Diesel Engine**
Fluid
**PETRO CANADA DURON HP 15W40 (--- GAL)**

## 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 | | **PCA0082892** | PCA0069241 | PCA0058386 |
| Sample Date | | Client Info | | **26 Sep 2023** | 21 Sep 2022 | 29 Jul 2022 |
| Machine Age | hrs | Client Info | | **0** | 8457 | 8457 |
| Oil Age | hrs | Client Info | | **0** | 7920 | 7920 |
| Oil Changed | | Client Info | | **Not Changd** | N/A | N/A |
| 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 | **13** | 9 | 12 |
| Chromium | ppm | ASTM D5185m | >20 | **<1** | <1 | <1 |
| Nickel | ppm | ASTM D5185m | >4 | **<1** | <1 | 0 |
| Titanium | ppm | ASTM D5185m | | **0** | 0 | 0 |
| Silver | ppm | ASTM D5185m | >3 | **0** | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >20 | **0** | 2 | 2 |
| Lead | ppm | ASTM D5185m | >40 | **1** | 2 | <1 |
| Copper | ppm | ASTM D5185m | >330 | **1** | <1 | <1 |
| Tin | ppm | ASTM D5185m | >15 | **<1** | <1 | <1 |
| Vanadium | ppm | ASTM D5185m | | **0** | 0 | 0 |
| Cadmium | ppm | ASTM D5185m | | **0** | 0 | 0 |

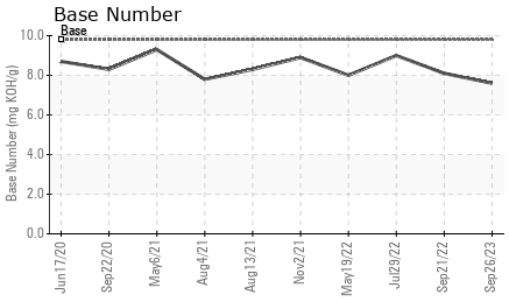
| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185m | | **1** | 5 | 6 |
| Barium | ppm | ASTM D5185m | | **2** | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | | **64** | 62 | 63 |
| Manganese | ppm | ASTM D5185m | | **<1** | <1 | <1 |
| Magnesium | ppm | ASTM D5185m | | **883** | 1027 | 953 |
| Calcium | ppm | ASTM D5185m | | **1065** | 1268 | 1140 |
| Phosphorus | ppm | ASTM D5185m | | **1000** | 1054 | 1026 |
| Zinc | ppm | ASTM D5185m | | **1160** | 1396 | 1254 |
| Sulfur | ppm | ASTM D5185m | | **2952** | 3911 | 3607 |

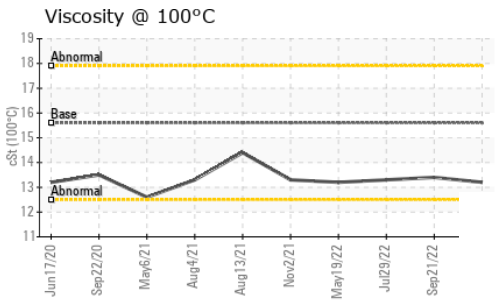
| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | >25 | **8** | 6 | 7 |
| Sodium | ppm | ASTM D5185m | | **0** | 1 | 2 |
| Potassium | ppm | ASTM D5185m | >20 | **3** | 4 | 2 |

| INFRA-RED | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Soot % | % | *ASTM D7844 | >3 | **0.3** | 0.3 | 0.3 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | **8.5** | 7.8 | 8.9 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | **19.1** | 19.5 | 21.4 |

| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | **15.7** | 15.7 | 17.3 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 9.8 | **7.6** | 8.1 | 9 |

# OIL ANALYSIS REPORT

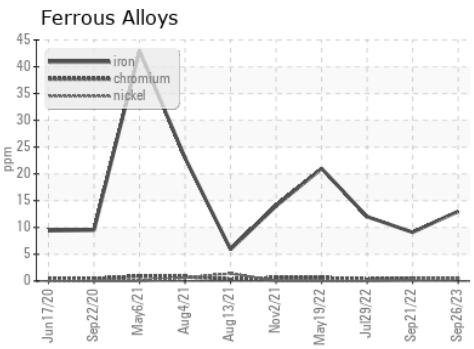


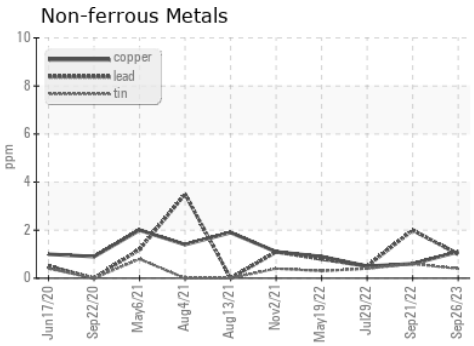



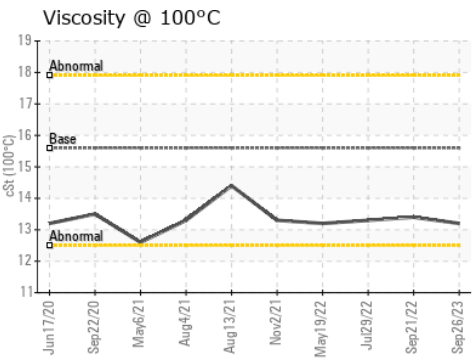

| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | **NONE** | NONE | NONE |
|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

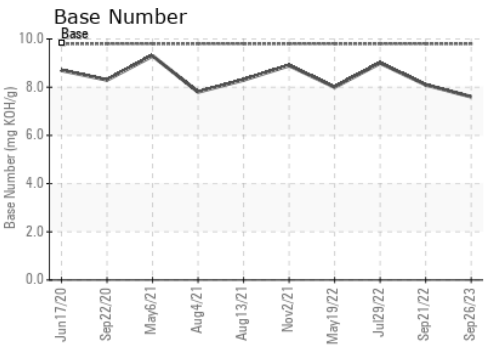
| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 100°C | cSt | ASTM D445 | 15.6 | **13.2** | 13.4 | 13.3 |

## GRAPHS




Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : PCA0082892
**Lab Number** : 05979419
**Unique Number** : 10696714
**Test Package** : FLEET

**Received** : 16 Oct 2023
**Diagnosed** : 17 Oct 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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Submitted By: senia zimmer