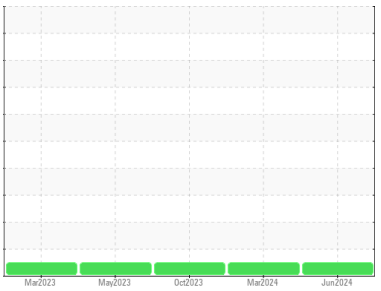
OIL DIAGNOSTICS

# OIL ANALYSIS REPORT

Sample Rating Trend




NORMAL

Area
## (51468Z) Walgreens - Tractor
Machine Id
## [Walgreens - Tractor] 136A63278
Component
**Diesel Engine**
Fluid
**PETRO CANADA DURON SHP 10W30 (11 GAL)**

## DIAGNOSIS

**Recommendation**
Resample at the next service interval to monitor.

**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 | | **PCA0093899** | PCA0093890 | PCA0093922 |
| Sample Date | | Client Info | | **13 Jun 2024** | 19 Mar 2024 | 24 Oct 2023 |
| Machine Age | mls | Client Info | | **207644** | 187402 | 133370 |
| Oil Age | mls | Client Info | | **54879** | 187402 | 54879 |
| Oil Changed | | Client Info | | **Not Changd** | Not Changd | N/A |
| 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 | >80 | **33** | 21 | 16 |
| Chromium | ppm | ASTM D5185m | >5 | **4** | 2 | 2 |
| Nickel | ppm | ASTM D5185m | >2 | **<1** | 0 | <1 |
| Titanium | ppm | ASTM D5185m | | **3** | 3 | <1 |
| Silver | ppm | ASTM D5185m | >3 | **<1** | <1 | <1 |
| Aluminum | ppm | ASTM D5185m | >30 | **8** | 7 | 6 |
| Lead | ppm | ASTM D5185m | >30 | **0** | 0 | 0 |
| Copper | ppm | ASTM D5185m | >150 | **28** | 24 | 54 |
| Tin | ppm | ASTM D5185m | >5 | **<1** | <1 | 0 |
| Vanadium | ppm | ASTM D5185m | | **0** | 0 | <1 |
| Cadmium | ppm | ASTM D5185m | | **0** | 0 | 0 |

| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185m | 2 | **6** | 6 | 4 |
| Barium | ppm | ASTM D5185m | 0 | **0** | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | 50 | **61** | 63 | 67 |
| Manganese | ppm | ASTM D5185m | 0 | **1** | <1 | <1 |
| Magnesium | ppm | ASTM D5185m | 950 | **978** | 934 | 923 |
| Calcium | ppm | ASTM D5185m | 1050 | **1176** | 1114 | 1137 |
| Phosphorus | ppm | ASTM D5185m | 995 | **1078** | 1008 | 935 |
| Zinc | ppm | ASTM D5185m | 1180 | **1308** | 1241 | 1233 |
| Sulfur | ppm | ASTM D5185m | 2600 | **2731** | 2795 | 2469 |

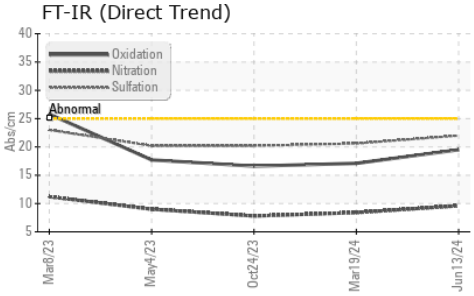
| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | >20 | **8** | 6 | 4 |
| Sodium | ppm | ASTM D5185m | | **3** | 2 | 0 |
| Potassium | ppm | ASTM D5185m | >20 | **19** | 15 | 16 |

| INFRA-RED | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Soot % | % | *ASTM D7844 | >3 | **1** | 0.7 | 0.5 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | **9.6** | 8.4 | 7.8 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | **22.0** | 20.6 | 20.2 |

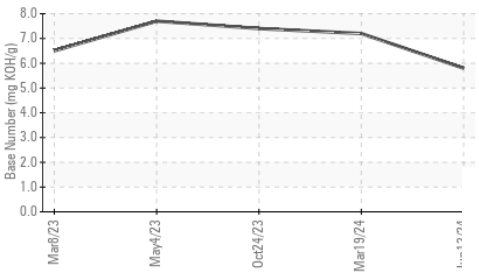
| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | **19.5** | 17.1 | 16.6 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | | **5.8** | 7.2 | 7.4 |

# OIL ANALYSIS REPORT

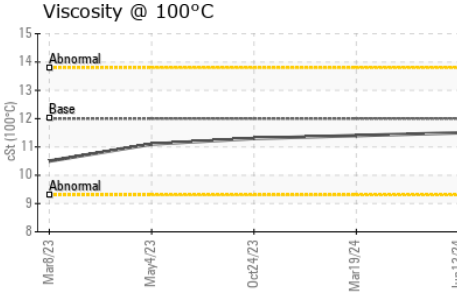
FT-IR (Direct Trend)




Base Number




Viscosity @ 100°C

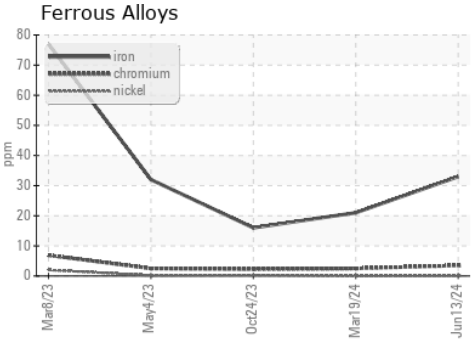



| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | **NONE** | NONE | NONE |
|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

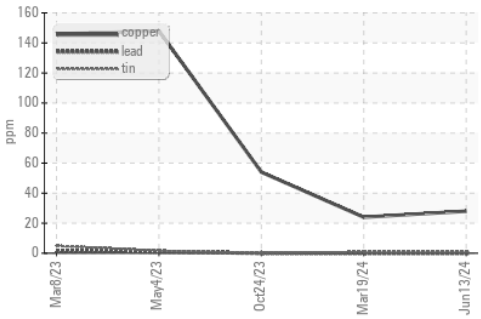
| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 100°C | cSt | ASTM D445 | 12.00 | **11.5** | 11.4 | 11.3 |

## GRAPHS

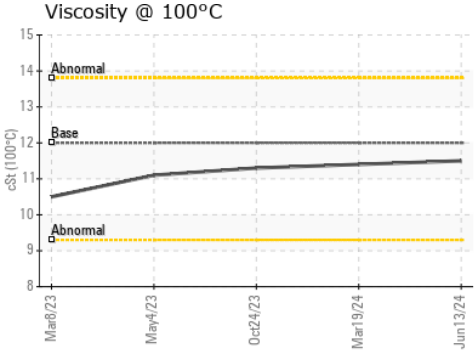
Ferrous Alloys



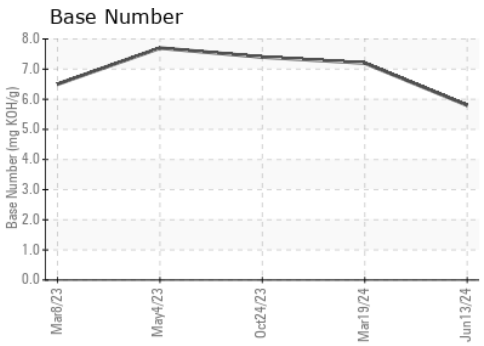

Non-ferrous Metals




Viscosity @ 100°C




Base Number




Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : PCA0093899
**Lab Number** : 06214129
**Unique Number** : 11086993
**Test Package** : FLEET

**Received** : 18 Jun 2024
**Tested** : 20 Jun 2024
**Diagnosed** : 20 Jun 2024 - 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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