

Machine Id INTERNATIONAL 52964 Component Diesel Engine Fluid PETRO CANADA DURON SAE 10W30 (--- GAL)

| RECOMMENDATION | Test | UOM | Method |
|---|----------------------------|------------|--------------------------------|
| | Sample Number | | Client Info |
| Confirm the source of the lubricant being utilized for top-up/fill. | Sample Date | | Client Info |
| Resample at the next service interval to monitor. | Machine Age | mls | Client Info |
| | Oil Age | mls | Client Info |
| | Filter Age | mls | Client Info |
| | Oil Changed | | Client Info |
| | Filter Changed | | Client Info |
| | | | |
| | Sample Status | | |
| WEAR | Sample Status | | ASTM D5185(m) |
| WEAR | | ppm ppm | ASTM D5185(m) ASTM D5185(m) |
| WEAR Metal levels are typical for a components first oil change. | Iron | | |
| | Iron Chromium | ppm | ASTM D5185(m) |
| | Iron Chromium Nickel | ppm ppm | ASTM D5185(m) ASTM D5185(m) |

CONTAMINATION

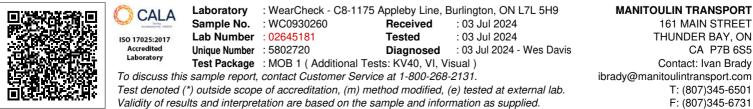
Elevated aluminum (AI) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. There is no indication of any contamination in the oil.

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|----------------------|----------|---------------|-----------|-------------|----------|----------|
| Sample Number | | Client Info | | WC0930260 | | |
| Sample Date | | Client Info | | 25 Apr 2024 | | |
| Machine Age | mls | Client Info | | 28762 | | |
| Oil Age | mls | Client Info | | 28762 | | |
| Filter Age | mls | Client Info | | 28762 | | |
| Oil Changed | | Client Info | | Changed | | |
| Filter Changed | | Client Info | | Changed | | |
| Sample Status | | | | NORMAL | | |
| | | | | | | |
| Iron | ppm | ASTM D5185(m) | >100 | 46 | | |
| Chromium | ppm | ASTM D5185(m) | >20 | 1 | | |
| Nickel | ppm | ASTM D5185(m) | >4 | <1 | | |
| Titanium | ppm | ASTM D5185(m) | | 0 | | |
| Silver | ppm | ASTM D5185(m) | >3 | <1 | | |
| Aluminum | ppm | ASTM D5185(m) | >20 | 13 | | |
| Lead | ppm | ASTM D5185(m) | >40 | 5 | | |
| Copper | ppm | ASTM D5185(m) | >330 | 22 | | |
| Tin | ppm | ASTM D5185(m) | >15 | 4 | | |
| Vanadium | ppm | ASTM D5185(m) | | 0 | | |
| White Metal | scalar | Visual* | NONE | VLITE | | |
| Yellow Metal | scalar | Visual* | NONE | NONE | | |
| | | | | | | |
| Silicon | ppm | ASTM D5185(m) | >25 | 35 | | |
| Potassium | ppm | ASTM D5185(m) | >20 | 43 | | |
| Fuel | | WC Method | >2.0 | <1.0 | | |
| Water | | WC Method | >0.2 | NEG | | |
| Glycol | | WC Method | | NEG | | |
| Soot % | % | ASTM D7844* | >3 | 0.2 | | |
| Nitration | Abs/cm | ASTM D7624* | >20 | 9.0 | | |
| Sulfation | Abs/.1mm | ASTM D7415* | >30 | 21.1 | | |
| Silt | scalar | Visual* | NONE | NONE | | |
| Debris | scalar | Visual* | NONE | NONE | | |
| Sand/Dirt | scalar | Visual* | NONE | NONE | | |
| Appearance | scalar | Visual* | NORML | NORML | | |
| Odor | scalar | Visual* | NORML | NORML | | |
| Emulsified Water | scalar | Visual* | >0.2 | NEG | | |
| | | | | | | |
| Sodium | ppm | ASTM D5185(m) | | 4 | | |
| Boron | ppm | ASTM D5185(m) | 1 | 59 | | |
| Barium | ppm | ASTM D5185(m) | 1 | 6 | | |
| Molybdenum | ppm | ASTM D5185(m) | 1 | 64 | | |
| Manganese | ppm | ASTM D5185(m) | 1 | 6 | | |
| Magnesium | ppm | ASTM D5185(m) | 10 | 453 | | |
| Calcium | ppm | ASTM D5185(m) | 2942 | 1814 | | |
| Phosphorus | ppm | ASTM D5185(m) | 1102 | 956 | | |
| Zinc | ppm | ASTM D5185(m) | 1351 | 1204 | | |
| Sulfur | ppm | ASTM D5185(m) | 3903 | 2487 | | |
| Oxidation | Abs/.1mm | ASTM D7414* | >25 | 18.6 | | |
| Visc @ 40°C | cSt | ASTM D7279(m) | 74.0 | 78.3 | | |
| Visc @ 100°C | cSt | ASTM D7279(m) | 11.4 | 11.3 | | |
| Viscosity Index (VI) | Scale | ASTM D2270* | 146 | 134 | | |
| | | | | | | |

FLUID CONDITION

Additive levels indicate the addition of a different brand, or type of oil. The condition of the oil is acceptable for the time in service.





Contact/Location: Ivan Brady - MANTHU Page 2 of 2