# LUBE 360 OIL DIAGNOSTICS
## FLEET
### OIL ANALYSIS REPORT

| | |
|---|---|
| WEAR | **NORMAL** |
| CONTAMINATION | **NORMAL** |
| FLUID CONDITION | **ATTENTION** |

**Machine Id**
**729017-1264**
**Component**
**Diesel Engine**
**Fluid**
**PETRO CANADA DURON SHP 15W40 (24 QTS)**

## RECOMMENDATION

Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | **GFL0110347** | GFL0110306 | GFL0102822 |
| Sample Date | | Client Info | | **12 Mar 2024** | 05 Mar 2024 | 13 Dec 2023 |
| Machine Age | hrs | Client Info | | **13023** | 12954 | 12415 |
| Oil Age | hrs | Client Info | | **608** | 539 | 591 |
| Filter Age | hrs | Client Info | | **608** | 539 | 591 |
| Oil Changed | | Client Info | | **Changed** | Not Changd | Changed |
| Filter Changed | | Client Info | | **Changed** | Not Changd | Changed |
| Sample Status | | | | **ATTENTION** | ATTENTION | ATTENTION |

## WEAR

All component wear rates are normal.

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185m | >80 | **23** | 21 | 28 |
| Chromium | ppm | ASTM D5185m | >5 | **<1** | <1 | 1 |
| Nickel | ppm | ASTM D5185m | >2 | **0** | <1 | <1 |
| Titanium | ppm | ASTM D5185m | | **0** | 0 | 0 |
| Silver | ppm | ASTM D5185m | >3 | **0** | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >30 | **2** | 3 | 2 |
| Lead | ppm | ASTM D5185m | >30 | **0** | 0 | <1 |
| Copper | ppm | ASTM D5185m | >150 | **<1** | 1 | 2 |
| Tin | ppm | ASTM D5185m | >5 | **0** | 0 | 0 |
| Vanadium | ppm | ASTM D5185m | | **0** | 0 | <1 |
| White Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |

## CONTAMINATION
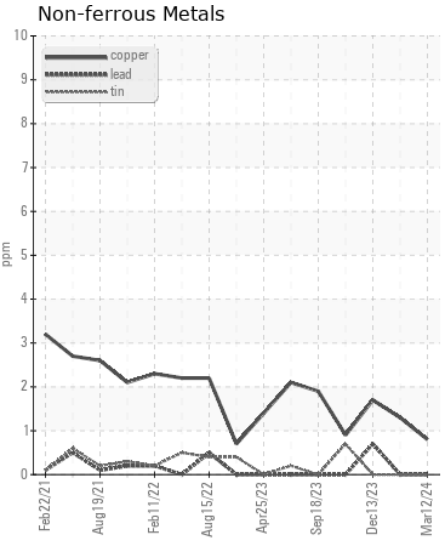
There is no indication of any contamination in the oil.

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | >20 | **3** | 4 | 5 |
| Potassium | ppm | ASTM D5185m | >20 | **2** | 2 | <1 |
| Fuel | | WC Method | >5 | **<1.0** | <1.0 | 1.5 |
| Water | | WC Method | >0.2 | **NEG** | NEG | NEG |
| Glycol | | WC Method | | **NEG** | NEG | NEG |
| Soot % | % | *ASTM D7844 | >3 | **0.5** | 0.5 | 0.5 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | **11.9** | 11.9 | 11.7 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | **22.2** | 21.3 | 22.2 |
| 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 |

## FLUID CONDITION

The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|---|---|---|---|---|---|---|
| Sodium | ppm | ASTM D5185m | | **11** | 7 | 5 |
| Boron | ppm | ASTM D5185m | 0 | **4** | 3 | 2 |
| Barium | ppm | ASTM D5185m | 0 | **0** | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | 60 | **60** | 56 | 58 |
| Manganese | ppm | ASTM D5185m | 0 | **0** | 0 | 0 |
| Magnesium | ppm | ASTM D5185m | 1010 | **933** | 835 | 831 |
| Calcium | ppm | ASTM D5185m | 1070 | **1147** | 998 | 958 |
| Phosphorus | ppm | ASTM D5185m | 1150 | **1011** | 888 | 788 |
| Zinc | ppm | ASTM D5185m | 1270 | **1296** | 1114 | 1095 |
| Sulfur | ppm | ASTM D5185m | 2060 | **3470** | 2579 | 2519 |
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | **20.7** | 20.2 | 21.2 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 9.8 | **5.8** | 6.6 | 6.2 |
| Visc @ 100°C | cSt | ASTM D445 | 15.4 | **12.3** | 12.3 | 11.8 |
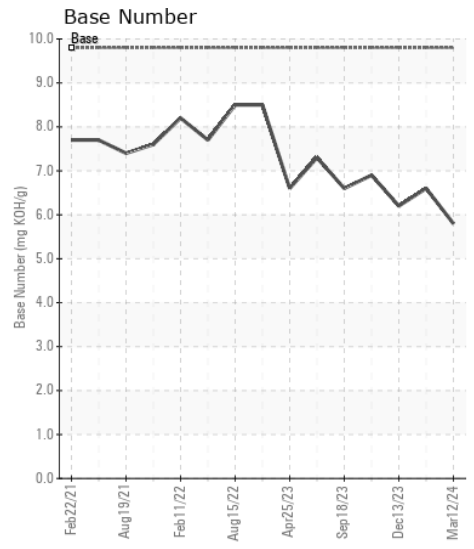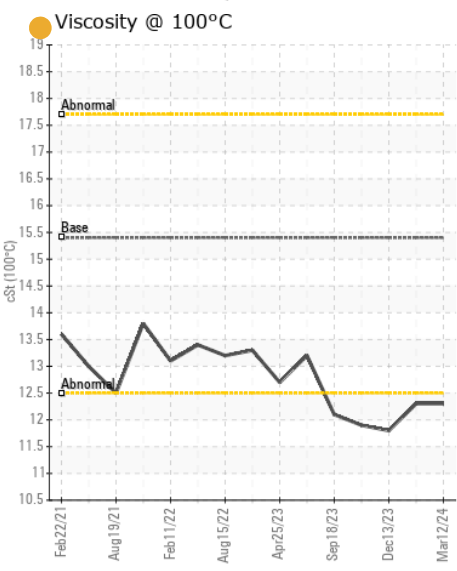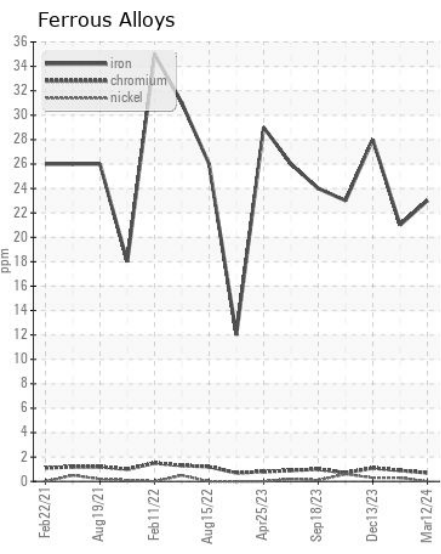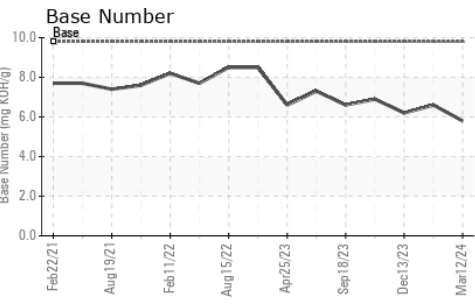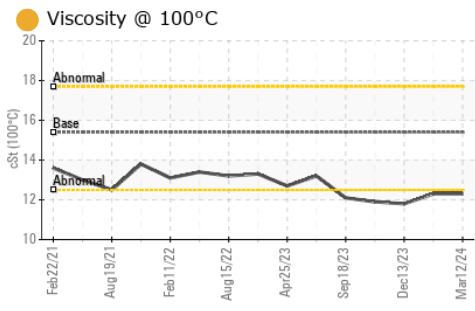
# Viscosity @ 100°C



# Base Number



# Ferrous Alloys



# Non-ferrous Metals



# Viscosity @ 100°C



# Base Number

ANAB ACCREDITED ISO/IEC 17025 TESTING LABORATORY

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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