FLEET LUBE 360 OIL DIAGNOSTICS

# OIL ANALYSIS REPORT

| | |
|---|---|
| WEAR | NORMAL |
| CONTAMINATION | ABNORMAL |
| FLUID CONDITION | ABNORMAL |

Machine Id
**722033**
Component
**Diesel Engine**
Fluid
**PETRO CANADA DURON SHP 15W40 (--- GAL)**

## RECOMMENDATION

We recommend that you drain the oil from the component if this has not already been done. We recommend an early resample to monitor this condition.

## WEAR

All component wear rates are normal.

## CONTAMINATION

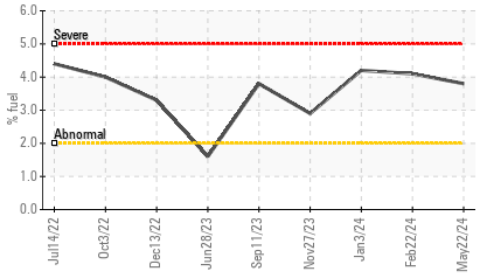
There is a moderate amount of fuel present in the oil. Tests confirm the presence of fuel in the oil.

## FLUID CONDITION

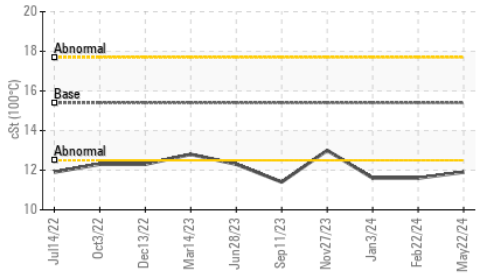
The BN result indicates that there is suitable alkalinity remaining in the oil. Fuel is present in the oil and is lowering the viscosity. The oil is no longer serviceable due to the presence of contaminants.

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | **GFL0116023** | GFL0097505 | GFL0097481 |
| Sample Date | | Client Info | | **22 May 2024** | 22 Feb 2024 | 03 Jan 2024 |
| Machine Age | hrs | Client Info | | **17158** | 16594 | 16235 |
| Oil Age | hrs | Client Info | | **13691** | 13691 | 13691 |
| Filter Age | hrs | Client Info | | **0** | 0 | 0 |
| Oil Changed | | Client Info | | **N/A** | N/A | N/A |
| Filter Changed | | Client Info | | **N/A** | N/A | N/A |
| Sample Status | | | | **ABNORMAL** | ABNORMAL | ABNORMAL |
| Iron | ppm | ASTM D5185m | >100 | **32** | 25 | 30 |
| Chromium | ppm | ASTM D5185m | >20 | **2** | 2 | 2 |
| Nickel | ppm | ASTM D5185m | >4 | **<1** | 0 | 0 |
| Titanium | ppm | ASTM D5185m | | **<1** | <1 | 0 |
| Silver | ppm | ASTM D5185m | >3 | **1** | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >20 | **4** | <1 | <1 |
| Lead | ppm | ASTM D5185m | >40 | **2** | 1 | 2 |
| Copper | ppm | ASTM D5185m | >330 | **3** | 2 | 8 |
| Tin | ppm | ASTM D5185m | >15 | **1** | 0 | <1 |
| Vanadium | ppm | ASTM D5185m | | **<1** | <1 | 0 |
| White Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Silicon | ppm | ASTM D5185m | >25 | **6** | 3 | 6 |
| Potassium | ppm | ASTM D5185m | >20 | **3** | 0 | <1 |
| Fuel | % | ASTM D3524 | >2.0 | ▲ **3.8** | ▲ 4.1 | ▲ 4.2 |
| Water | | WC Method | >0.2 | **NEG** | NEG | NEG |
| Glycol | | WC Method | | **NEG** | NEG | NEG |
| Soot % | % | *ASTM D7844 | >3 | **0.2** | 0.2 | 0.2 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | **10.3** | 10.6 | 10.0 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | **21.2** | 21.1 | 21.3 |
| 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 |
| Sodium | ppm | ASTM D5185m | | **7** | 7 | 6 |
| Boron | ppm | ASTM D5185m | 0 | **6** | 6 | 7 |
| Barium | ppm | ASTM D5185m | 0 | **1** | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | 60 | **71** | 69 | 67 |
| Manganese | ppm | ASTM D5185m | 0 | **<1** | <1 | 0 |
| Magnesium | ppm | ASTM D5185m | 1010 | **1063** | 1038 | 1092 |
| Calcium | ppm | ASTM D5185m | 1070 | **1209** | 1261 | 1340 |
| Phosphorus | ppm | ASTM D5185m | 1150 | **1143** | 1098 | 1129 |
| Zinc | ppm | ASTM D5185m | 1270 | **1384** | 1300 | 1500 |
| Sulfur | ppm | ASTM D5185m | 2060 | **3222** | 3041 | 3019 |
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | **17.5** | 17.7 | 16.3 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 9.8 | **6.8** | 6.7 | 7.7 |
| Visc @ 100°C | cSt | ASTM D445 | 15.4 | ▲ **11.9** | ▲ 11.6 | ▲ 11.6 |

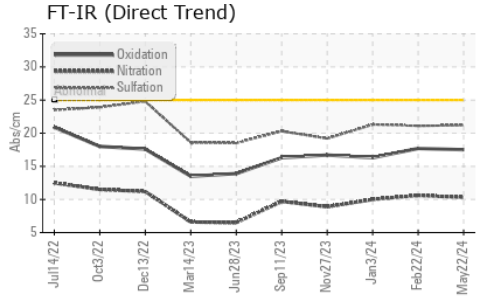
Fuel Dilution



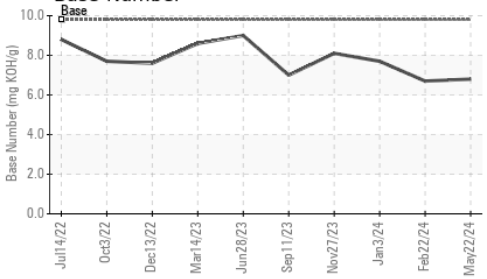

Viscosity @ 100°C



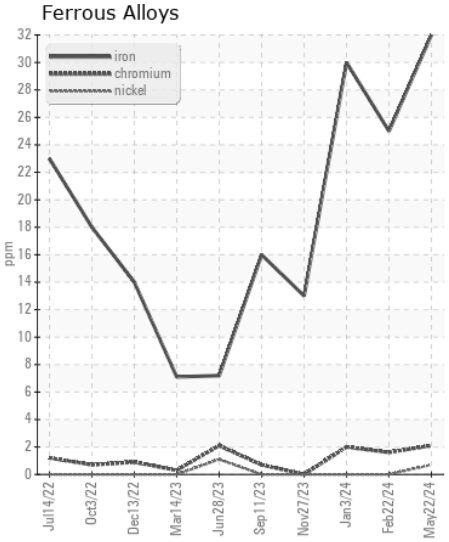

FT-IR (Direct Trend)



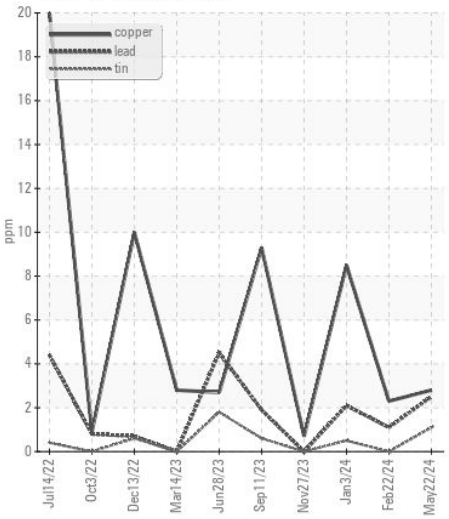

Base Number



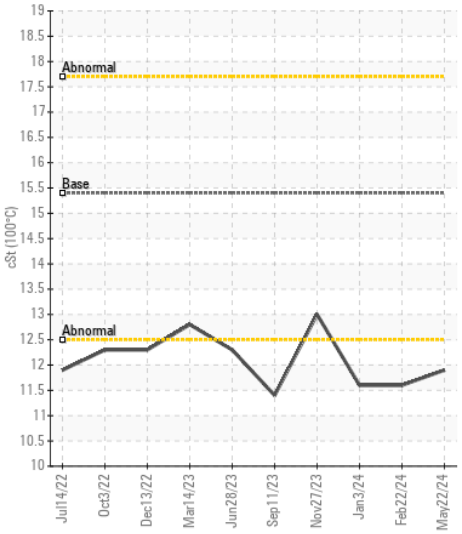

Ferrous Alloys



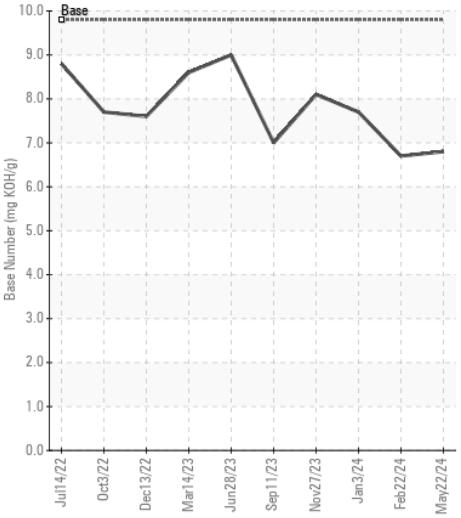

Non-ferrous Metals




Viscosity @ 100°C




Base Number




Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : GFL0116023
**Lab Number** : 06191875
**Unique Number** : 11048627
**Test Package** : FLEET ( Additional Tests: PercentFuel )

**Received** : 28 May 2024
**Tested** : 29 May 2024
**Diagnosed** : 29 May 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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