FLEET LUBE 360 OIL DIAGNOSTICS

# OIL ANALYSIS REPORT

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

Area
**(TFY1477)**
Machine Id
**934058**
Component
**Natural Gas Engine**
Fluid
**PETRO CANADA DURON GEO LD 15W40 (--- GAL)**

## RECOMMENDATION

We advise that you check for a possible overheat condition. We recommend that you drain the oil from the component if this has not already been done. We recommend you service the filters on this component. ( Customer Sample Comment: Sample )

## WEAR

Tin, aluminum and iron ppm levels are abnormal. Cylinder, crank, or cam shaft wear is indicated. Piston wear is indicated.

## CONTAMINATION

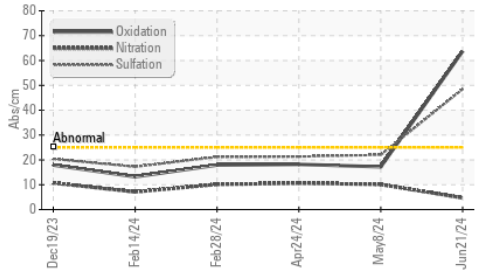
There is an abnormal level of sulfation indicated.

## FLUID CONDITION

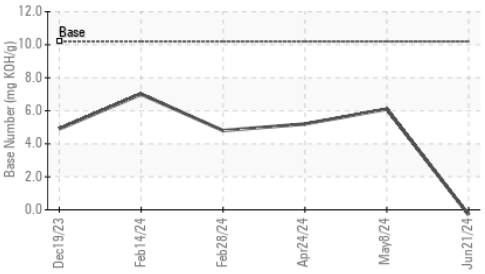
The oil viscosity is lower than normal. The BN level is low. An additive depletion is indicated. The oil is no longer serviceable.

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | GFL0125244 | GFL0117806 | GFL0117752 |
| Sample Date | | Client Info | | 21 Jun 2024 | 08 May 2024 | 24 Apr 2024 |
| Machine Age | hrs | Client Info | | 2577 | 2214 | 2107 |
| Oil Age | hrs | Client Info | | 0 | 207 | 489 |
| Filter Age | hrs | Client Info | | 0 | 207 | 489 |
| Oil Changed | | Client Info | | Not Changd | Changed | N/A |
| Filter Changed | | Client Info | | Not Changd | Changed | None |
| Sample Status | | | | ABNORMAL | NORMAL | NORMAL |
| Iron | ppm | ASTM D5185m | >50 | ▲ 48 | 10 | 14 |
| Chromium | ppm | ASTM D5185m | >4 | <1 | <1 | 2 |
| Nickel | ppm | ASTM D5185m | >2 | <1 | 0 | 2 |
| Titanium | ppm | ASTM D5185m | | <1 | 0 | <1 |
| Silver | ppm | ASTM D5185m | >3 | <1 | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >9 | ▲ 17 | 8 | 11 |
| Lead | ppm | ASTM D5185m | >30 | 9 | 0 | <1 |
| Copper | ppm | ASTM D5185m | >35 | 10 | 3 | 2 |
| Tin | ppm | ASTM D5185m | >4 | ▲ 3 | <1 | 2 |
| Vanadium | ppm | ASTM D5185m | | <1 | 0 | <1 |
| White Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| Silicon | ppm | ASTM D5185m | >+100 | 5 | 4 | 6 |
| Potassium | ppm | ASTM D5185m | >20 | 9 | 22 | 40 |
| Water | | WC Method | >0.1 | NEG | NEG | NEG |
| Soot % | % | *ASTM D7844 | | 0.1 | 0.2 | 0 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | 4.7 | 10.1 | 10.6 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | ▲ 48.5 | 22.0 | 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 | >0.1 | NEG | NEG | NEG |
| Sodium | ppm | ASTM D5185m | | 4 | 8 | 7 |
| Boron | ppm | ASTM D5185m | 50 | 70 | 14 | 5 |
| Barium | ppm | ASTM D5185m | 5 | <1 | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | 50 | ● 2 | 53 | 56 |
| Manganese | ppm | ASTM D5185m | 0 | 1 | 1 | 1 |
| Magnesium | ppm | ASTM D5185m | 560 | ● 19 | 554 | 606 |
| Calcium | ppm | ASTM D5185m | 1510 | ● 104 | 1572 | 1854 |
| Phosphorus | ppm | ASTM D5185m | 780 | ● 296 | 777 | 824 |
| Zinc | ppm | ASTM D5185m | 870 | ● 23 | 944 | 1093 |
| Sulfur | ppm | ASTM D5185m | 2040 | ● 1203 | 2656 | 3259 |
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | ▲ 63.7 | 17.2 | 18.2 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 10.2 | ▲ -0.3 | 6.1 | 5.2 |
| Visc @ 100°C | cSt | ASTM D445 | 15.1 | ▲ 7.1 | 14.7 | 14.5 |

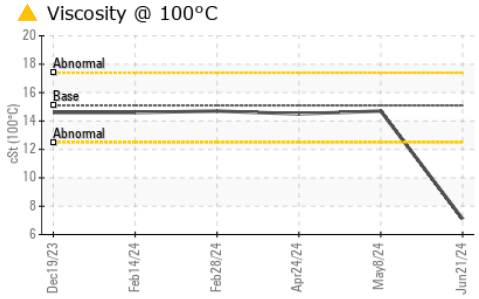
FT-IR (Direct Trend)



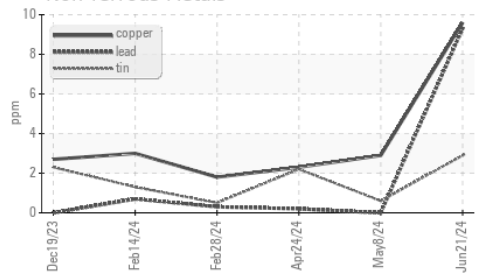

Base Number



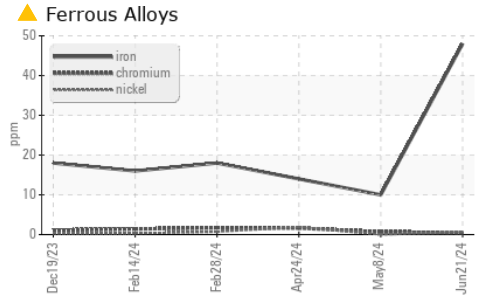

Viscosity @ 100°C



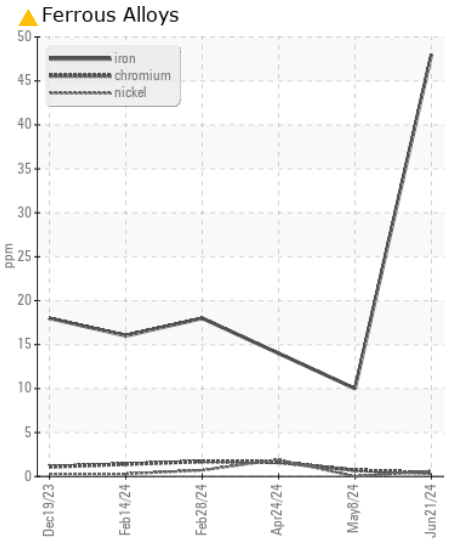

Non-ferrous Metals



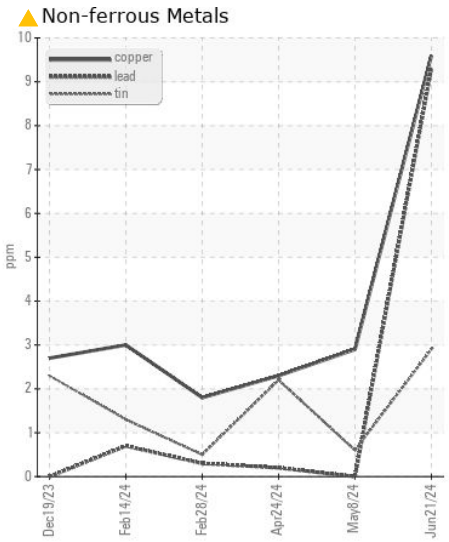

Ferrous Alloys



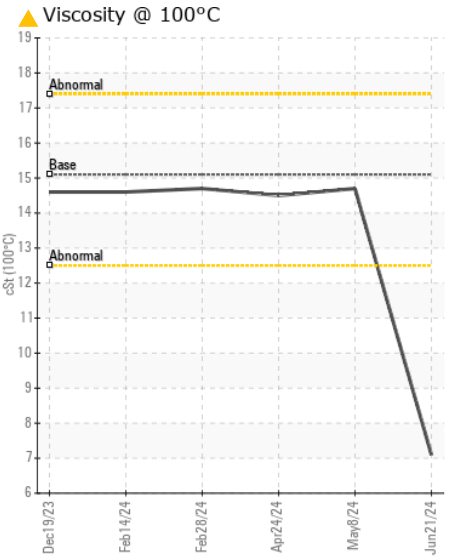

Ferrous Alloys




Non-ferrous Metals




Viscosity @ 100°C

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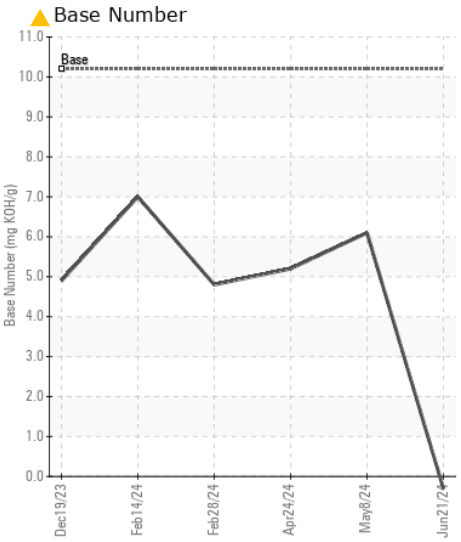


Certificate L2367

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|---|---|---|---|
| **Laboratory** | : WearCheck USA - 501 Madison Ave., Cary, NC 27513 | | |
| **Sample No.** | : GFL0125244 | **Received** | : 28 Jun 2024 |
| **Lab Number** | : 06224231 | **Tested** | : 01 Jul 2024 |
| **Unique Number** | : 11102428 | **Diagnosed** | : 01 Jul 2024 - Angela Borella |
| **Test Package** | : FLEET | | |

*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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