FLEET LUBE 360 OIL DIAGNOSTICS

# OIL ANALYSIS REPORT

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

Area
## (62A0X16) TALLASSEE
Machine Id
## 925026-152580
Component
## Diesel Engine
Fluid
## PETRO CANADA DURON SHP 15W40 (--- LTR)

## RECOMMENDATION

We advise that you check for the source of the coolant leak. Check for low coolant level. We recommend an early resample to monitor this condition.

## WEAR

Valve wear is indicated.

## CONTAMINATION

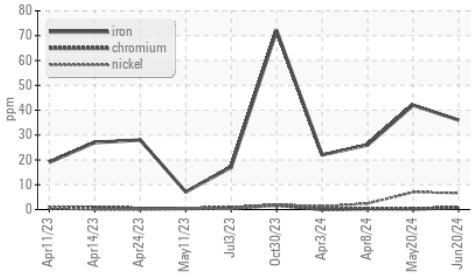
Sodium and/or potassium levels are high. Elemental level of silicon (Si) above normal indicating ingress of seal material.

## FLUID CONDITION

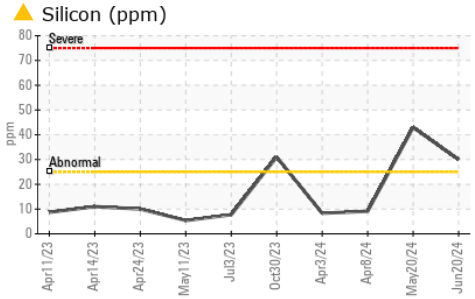
The BN result indicates that there is suitable alkalinity remaining in the oil.

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | GFL0080692 | GFL0088610 | GFL0080694 |
| Sample Date | | Client Info | | 20 Jun 2024 | 20 May 2024 | 08 Apr 2024 |
| Machine Age | hrs | Client Info | | 19811 | 19557 | 19337 |
| Oil Age | hrs | Client Info | | 19811 | 19557 | 19337 |
| Filter Age | hrs | Client Info | | 0 | 0 | 0 |
| Oil Changed | | Client Info | | N/A | Not Changd | N/A |
| Filter Changed | | Client Info | | N/A | N/A | N/A |
| Sample Status | | | | ABNORMAL | ABNORMAL | NORMAL |
| Iron | ppm | ASTM D5185m | >120 | 36 | 42 | 26 |
| Chromium | ppm | ASTM D5185m | >20 | <1 | <1 | <1 |
| Nickel | ppm | ASTM D5185m | >5 | ▲ 7 | ▲ 7 | 2 |
| Titanium | ppm | ASTM D5185m | >2 | <1 | 0 | <1 |
| Silver | ppm | ASTM D5185m | >2 | <1 | <1 | 0 |
| Aluminum | ppm | ASTM D5185m | >20 | 5 | 8 | 3 |
| Lead | ppm | ASTM D5185m | >40 | 1 | 1 | <1 |
| Copper | ppm | ASTM D5185m | >330 | 19 | 13 | 5 |
| Tin | ppm | ASTM D5185m | >15 | <1 | 1 | <1 |
| 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 | >25 | ▲ 30 | ▲ 43 | 9 |
| Potassium | ppm | ASTM D5185m | >20 | ▲ 27 | ▲ 30 | 24 |
| Fuel | | WC Method | >3.0 | <1.0 | <1.0 | <1.0 |
| Water | | WC Method | >0.2 | NEG | NEG | NEG |
| Glycol | % | *ASTM D2982 | | NEG | NEG | NEG |
| Soot % | % | *ASTM D7844 | >4 | 0.5 | 0.5 | 0.6 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | 9.7 | 8.6 | 6.8 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | 19.3 | 18.6 | 17.6 |
| 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 | | ▲ 428 | ▲ 270 | 67 |
| Boron | ppm | ASTM D5185m | 0 | 26 | 24 | 16 |
| Barium | ppm | ASTM D5185m | 0 | 1 | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | 60 | 62 | 75 | 60 |
| Manganese | ppm | ASTM D5185m | 0 | 2 | 2 | <1 |
| Magnesium | ppm | ASTM D5185m | 1010 | 849 | 881 | 905 |
| Calcium | ppm | ASTM D5185m | 1070 | 1030 | 1110 | 1058 |
| Phosphorus | ppm | ASTM D5185m | 1150 | 1029 | 1030 | 1042 |
| Zinc | ppm | ASTM D5185m | 1270 | 1180 | 1193 | 1222 |
| Sulfur | ppm | ASTM D5185m | 2060 | 3210 | 3826 | 3737 |
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | 15.3 | 15.4 | 14.1 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 9.8 | 10.0 | 10.0 | 10.6 |
| Visc @ 100°C | cSt | ASTM D445 | 15.4 | 13.7 | 13.7 | 13.6 |

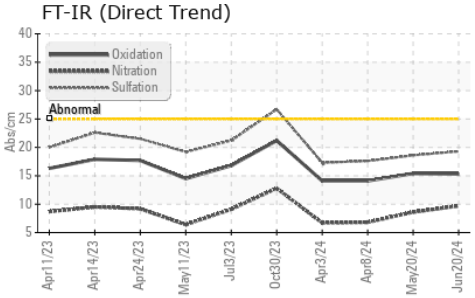
Ferrous Alloys



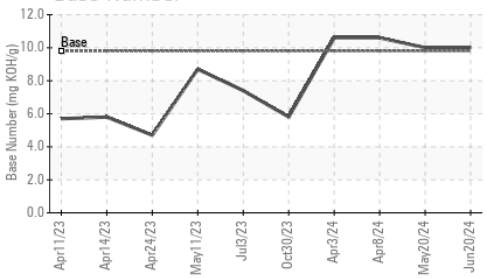

Silicon (ppm)



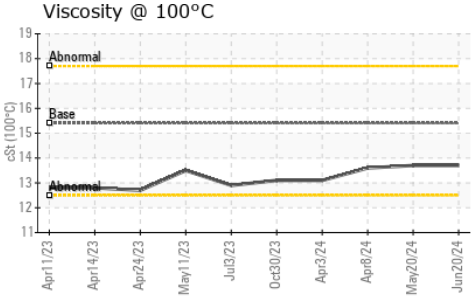

FT-IR (Direct Trend)



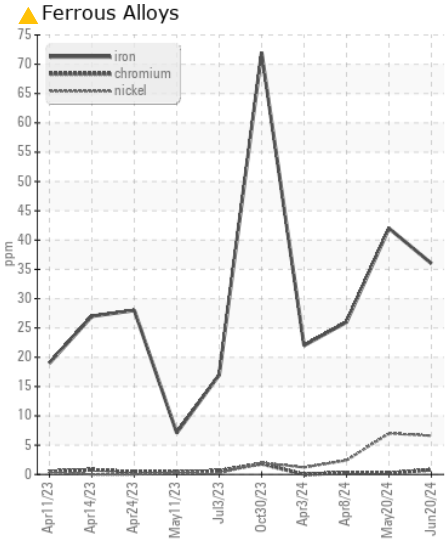

Base Number



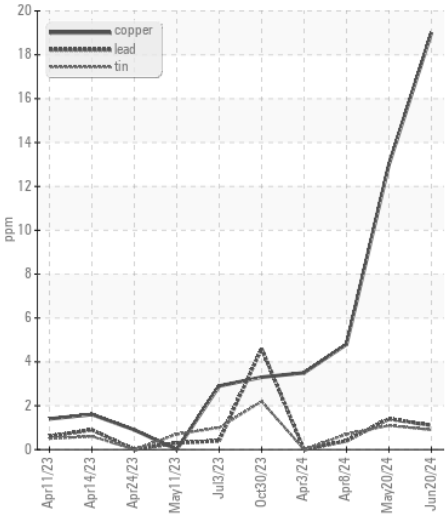

Viscosity @ 100°C



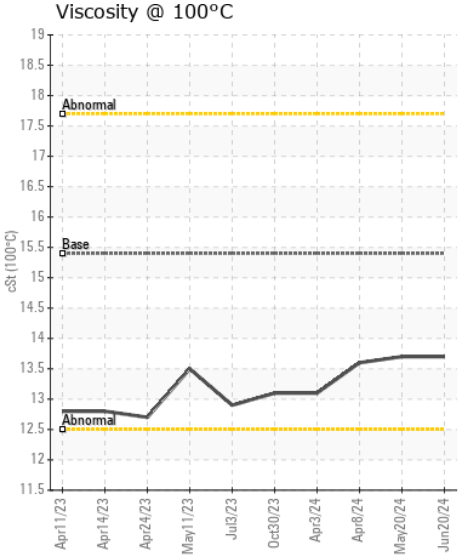

Ferrous Alloys



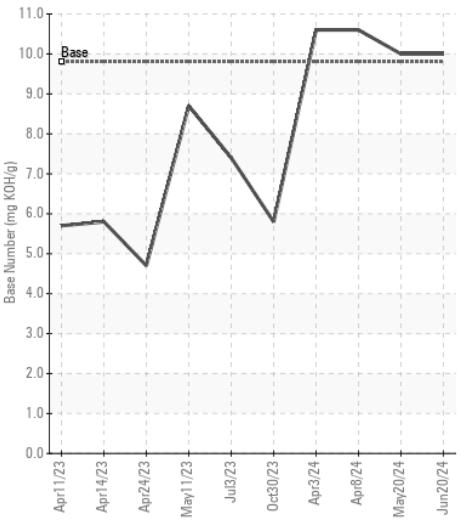

Non-ferrous Metals




Viscosity @ 100°C




Base Number




Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : GFL0080692
**Lab Number** : 06219305
**Unique Number** : 11097502
**Test Package** : FLEET ( Additional Tests: Glycol )

**Received** : 25 Jun 2024
**Tested** : 26 Jun 2024
**Diagnosed** : 26 Jun 2024 - Jonathan Hester

GFL Environmental - 172 - Montgomery-Alexander City-Tallahassee
Multiple Sites
Montgomery, AL
US 36108
Contact: RICHARD HATFIELD
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T:
F:

*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)*