FLEET LUBE 360 OIL DIAGNOSTICS

# OIL ANALYSIS REPORT

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

Machine Id
**EX0200**
Component
**Diesel Engine**
Fluid
**PETRO CANADA DURON SHP 15W40 (--- GAL)**

## RECOMMENDATION

Resample at the next service interval to monitor.

## WEAR

Metal levels are typical for a new component breaking in.

## CONTAMINATION

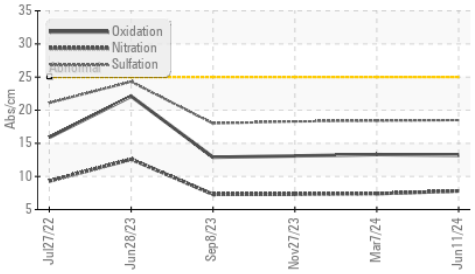
There is no indication of any contamination in the oil.

## FLUID CONDITION

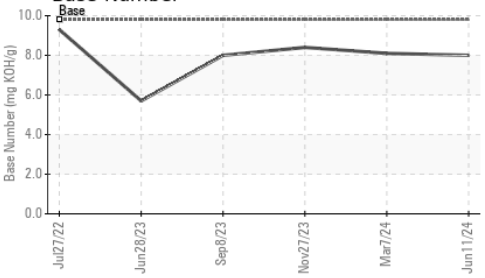
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | GFL0116039 | GFL0097495 | GFL0097467 |
| Sample Date | | Client Info | | 11 Jun 2024 | 07 Mar 2024 | 27 Nov 2023 |
| Machine Age | hrs | Client Info | | 111 | 111 | 111 |
| Oil Age | hrs | Client Info | | 111 | 111 | 111 |
| Filter Age | hrs | Client Info | | 0 | 111 | 0 |
| Oil Changed | | Client Info | | N/A | N/A | N/A |
| Filter Changed | | Client Info | | N/A | N/A | N/A |
| Sample Status | | | | NORMAL | NORMAL | NORMAL |
| Iron | ppm | ASTM D5185m | >100 | 24 | 20 | 17 |
| Chromium | ppm | ASTM D5185m | >20 | <1 | <1 | <1 |
| Nickel | ppm | ASTM D5185m | >4 | <1 | 0 | 0 |
| Titanium | ppm | ASTM D5185m | | 6 | 6 | 6 |
| Silver | ppm | ASTM D5185m | >3 | 0 | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >20 | 4 | 3 | 3 |
| Lead | ppm | ASTM D5185m | >40 | 0 | <1 | 0 |
| Copper | ppm | ASTM D5185m | >330 | 2 | 2 | 1 |
| Tin | ppm | ASTM D5185m | >15 | 0 | <1 | 0 |
| 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 | 6 | 7 | 6 |
| Potassium | ppm | ASTM D5185m | >20 | 14 | 14 | 12 |
| Fuel | | WC Method | >5 | <1.0 | <1.0 | <1.0 |
| Water | | WC Method | >0.2 | NEG | NEG | NEG |
| Glycol | | WC Method | | NEG | NEG | NEG |
| Soot % | % | *ASTM D7844 | >3 | 0.6 | 0.5 | 0.4 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | 7.8 | 7.4 | 7.3 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | 18.5 | 18.4 | 18.3 |
| 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 | | 9 | 6 | 8 |
| Boron | ppm | ASTM D5185m | 0 | 108 | 117 | 154 |
| Barium | ppm | ASTM D5185m | 0 | 0 | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | 60 | 9 | 10 | 6 |
| Manganese | ppm | ASTM D5185m | 0 | <1 | 0 | 0 |
| Magnesium | ppm | ASTM D5185m | 1010 | 691 | 624 | 668 |
| Calcium | ppm | ASTM D5185m | 1070 | 1298 | 1191 | 1256 |
| Phosphorus | ppm | ASTM D5185m | 1150 | 1014 | 937 | 992 |
| Zinc | ppm | ASTM D5185m | 1270 | 1182 | 1067 | 1177 |
| Sulfur | ppm | ASTM D5185m | 2060 | 4051 | 3476 | 3570 |
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | 13.2 | 13.3 | 13.1 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 9.8 | 8.0 | 8.1 | 8.4 |
| Visc @ 100°C | cSt | ASTM D445 | 15.4 | 14.0 | 14.3 | 14.4 |

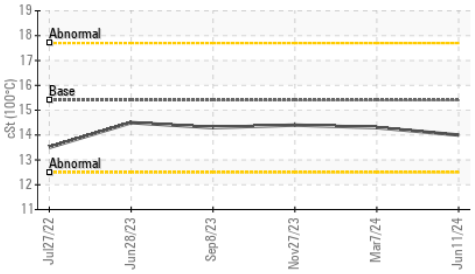
FT-IR (Direct Trend)



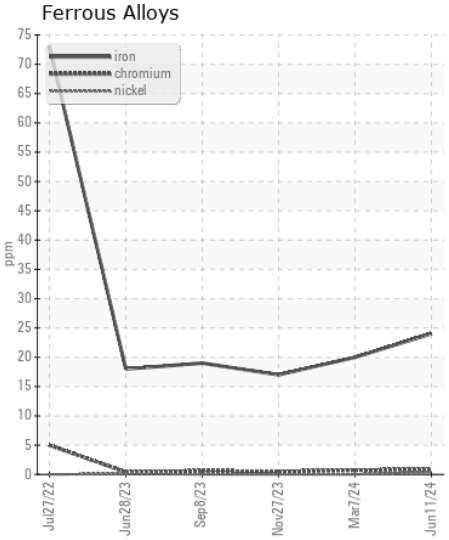

Base Number



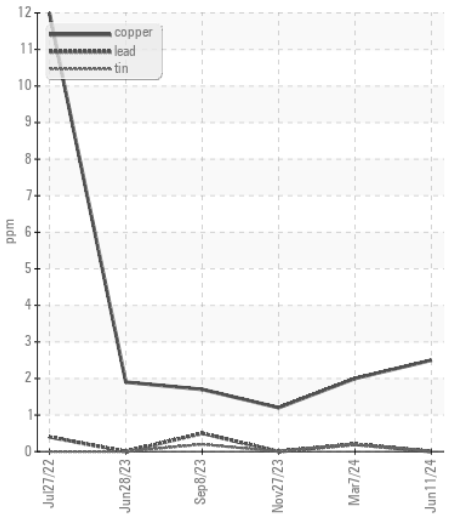

Viscosity @ 100°C



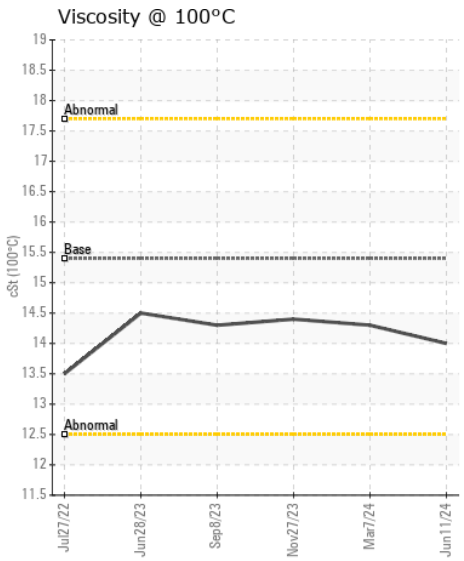

Ferrous Alloys



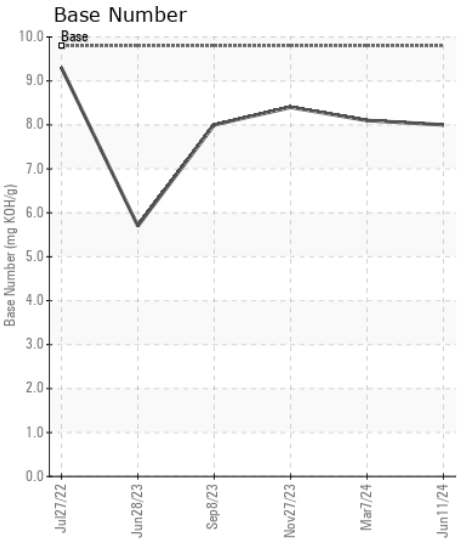

Non-ferrous Metals




Viscosity @ 100°C




Base Number




Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : GFL0116039
**Lab Number** : 06211345
**Unique Number** : 11084209
**Test Package** : FLEET

**Received** : 17 Jun 2024
**Tested** : 19 Jun 2024
**Diagnosed** : 19 Jun 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)*

**GFL Environmental - 641 - Alpena**
1241 KING SETTLEMENT RD
ALPENA, MI
US 49707
Contact: DYLAN TOLAN
dylan.tolan@gflenv.com
T: (989)854-7203
F: