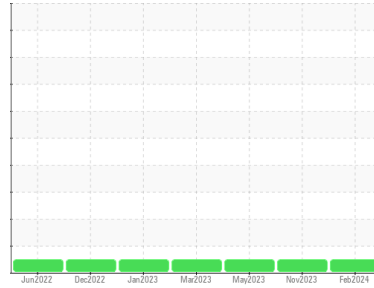




OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL



Area
(PBD3126)
Machine Id
720063

Component
Diesel Engine
Fluid

PETRO CANADA DURON SHP 15W40 (--- GAL)

DIAGNOSIS

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.

SAMPLE INFORMATION

| method | limit/base | current | history1 | history2 |
|---------------|-------------|--------------------|-------------|-------------|
| Sample Number | Client Info | GFL0106838 | GFL0092017 | GFL0078162 |
| Sample Date | Client Info | 29 Feb 2024 | 08 Nov 2023 | 03 May 2023 |
| Machine Age | hrs | 8232 | 7978 | 6635 |
| Oil Age | hrs | 4118 | 7978 | 0 |
| Oil Changed | Client Info | Changed | Changed | Not Changed |
| Sample Status | | NORMAL | NORMAL | NORMAL |

CONTAMINATION

| method | limit/base | current | history1 | history2 |
|--------|----------------|----------------|----------|----------|
| Fuel | WC Method >3.0 | <1.0 | <1.0 | <1.0 |
| Water | WC Method >0.2 | NEG | NEG | NEG |
| Glycol | WC Method | NEG | NEG | NEG |

WEAR METALS

| method | limit/base | current | history1 | history2 |
|----------|----------------------|--------------|----------|----------|
| Iron | ppm ASTM D5185m >90 | 15 | 24 | 17 |
| Chromium | ppm ASTM D5185m >20 | 1 | 1 | 1 |
| Nickel | ppm ASTM D5185m >2 | <1 | 0 | 0 |
| Titanium | ppm ASTM D5185m >2 | <1 | 0 | 0 |
| Silver | ppm ASTM D5185m >2 | 0 | 0 | 0 |
| Aluminum | ppm ASTM D5185m >20 | 4 | 6 | 2 |
| Lead | ppm ASTM D5185m >40 | <1 | 0 | 0 |
| Copper | ppm ASTM D5185m >330 | 4 | <1 | 3 |
| Tin | ppm ASTM D5185m >15 | <1 | <1 | 0 |
| Vanadium | ppm ASTM D5185m | 0 | 0 | 0 |
| Cadmium | ppm ASTM D5185m | 0 | 0 | 0 |

ADDITIVES

| method | limit/base | current | history1 | history2 |
|------------|----------------------|--------------|----------|----------|
| Boron | ppm ASTM D5185m 0 | 26 | 2 | 2 |
| Barium | ppm ASTM D5185m 0 | 0 | 0 | 0 |
| Molybdenum | ppm ASTM D5185m 60 | 48 | 58 | 57 |
| Manganese | ppm ASTM D5185m 0 | <1 | <1 | <1 |
| Magnesium | ppm ASTM D5185m 1010 | 593 | 987 | 941 |
| Calcium | ppm ASTM D5185m 1070 | 1335 | 1038 | 1027 |
| Phosphorus | ppm ASTM D5185m 1150 | 832 | 1070 | 1007 |
| Zinc | ppm ASTM D5185m 1270 | 985 | 1334 | 1241 |
| Sulfur | ppm ASTM D5185m 2060 | 2748 | 3076 | 3469 |

CONTAMINANTS

| method | limit/base | current | history1 | history2 |
|-----------|---------------------|----------|----------|----------|
| Silicon | ppm ASTM D5185m >25 | 6 | 6 | 4 |
| Sodium | ppm ASTM D5185m | 6 | 4 | 4 |
| Potassium | ppm ASTM D5185m >20 | 2 | 1 | <1 |

INFRA-RED

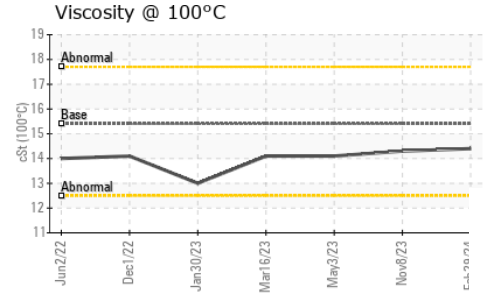
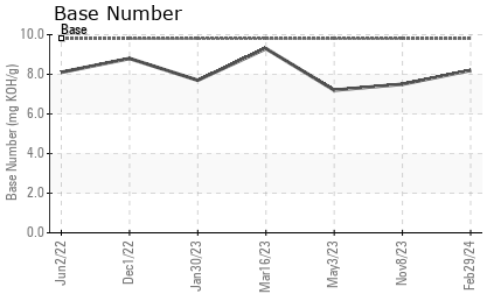
| method | limit/base | current | history1 | history2 |
|-----------|--------------------------|-------------|----------|----------|
| Soot % | % *ASTM D7844 >6 | 0.6 | 1.1 | 0.7 |
| Nitration | Abs/cm *ASTM D7624 >20 | 9.6 | 11.1 | 9.2 |
| Sulfation | Abs/.1mm *ASTM D7415 >30 | 20.1 | 21.4 | 18.0 |

FLUID DEGRADATION

| method | limit/base | current | history1 | history2 |
|------------------|--------------------------|-------------|----------|----------|
| Oxidation | Abs/.1mm *ASTM D7414 >25 | 17.5 | 17.7 | 15.5 |
| Base Number (BN) | mg KOH/g ASTM D2896 9.8 | 8.2 | 7.5 | 7.2 |



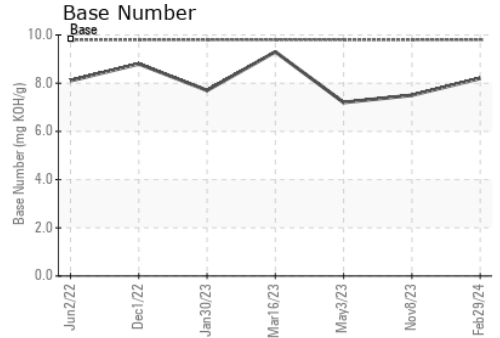
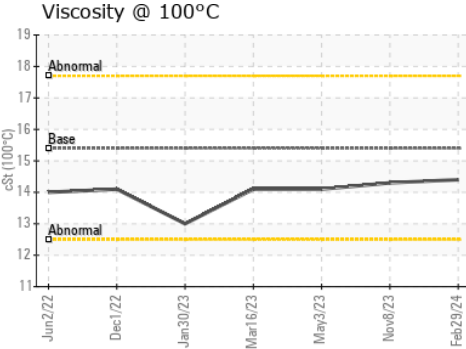
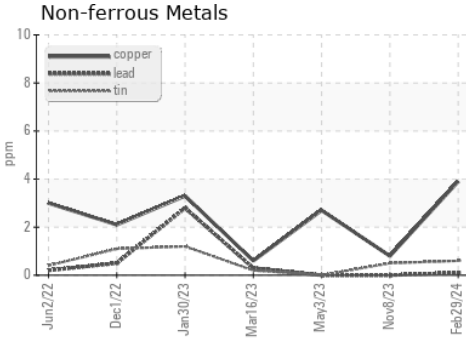
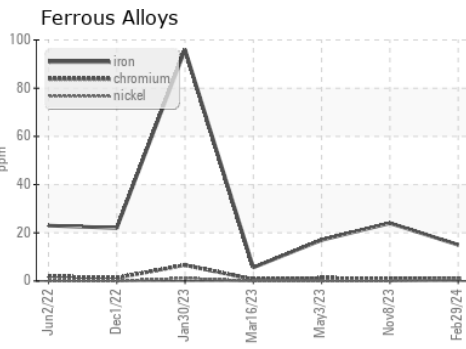
OIL ANALYSIS REPORT



| VISUAL | method | limit/base | current | history1 | history2 |
|------------------|--------|------------|---------|----------|----------|
| White Metal | scalar | *Visual | NONE | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | NONE | NONE |
| Silt | scalar | *Visual | NONE | NONE | NONE |
| Debris | scalar | *Visual | NONE | NONE | NONE |
| Sand/Dirt | scalar | *Visual | NONE | NONE | NONE |
| Appearance | scalar | *Visual | NORML | NORML | NORML |
| Odor | scalar | *Visual | NORML | NORML | NORML |
| Emulsified Water | scalar | *Visual | >0.2 | NEG | NEG |
| Free Water | scalar | *Visual | | NEG | NEG |

| FLUID PROPERTIES | method | limit/base | current | history1 | history2 | |
|------------------|--------|------------|---------|-------------|----------|------|
| Visc @ 100°C | cSt | ASTM D445 | 15.4 | 14.4 | 14.3 | 14.1 |

GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0106838
Lab Number : **06107258**
Unique Number : 10910755
Test Package : FLEET
Received : 04 Mar 2024
Tested : 05 Mar 2024
Diagnosed : 06 Mar 2024 - Sean Felton

GFL Environmental - 856 - Houston South
 8515 Highway 6 South
 Houston, TX
 US 77083
 Contact: Apolinar Zacarias
 pzacariascano@gflenv.com

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)