



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



Machine Id
427022-423
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (--- LTR)

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.

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|----------------|-----|-------------|-----------|--------------------|-------------|-------------|
| Sample Number | | Client Info | | GFL0103871 | GFL0091819 | GFL0086598 |
| Sample Date | | Client Info | | 07 Feb 2024 | 16 Nov 2023 | 07 Nov 2023 |
| Machine Age | hrs | Client Info | | 28967 | 28537 | 28528 |
| Oil Age | hrs | Client Info | | 0 | 0 | 0 |
| Filter Age | hrs | Client Info | | 0 | 0 | 0 |
| Oil Changed | | Client Info | | Not Chngd | Changed | Changed |
| Filter Changed | | Client Info | | Not Chngd | Changed | Changed |
| Sample Status | | | | ABNORMAL | NORMAL | ABNORMAL |

WEAR

All component wear rates are normal.

| | | | | | | |
|--------------|--------|-------------|------|--------------|------|------|
| Iron | ppm | ASTM D5185m | >120 | 2 | 2 | 7 |
| Chromium | ppm | ASTM D5185m | >20 | 0 | <1 | <1 |
| Nickel | ppm | ASTM D5185m | >5 | <1 | <1 | <1 |
| Titanium | ppm | ASTM D5185m | >2 | 0 | <1 | <1 |
| Silver | ppm | ASTM D5185m | >2 | 0 | 0 | <1 |
| Aluminum | ppm | ASTM D5185m | >20 | 2 | 2 | 3 |
| Lead | ppm | ASTM D5185m | >40 | 0 | <1 | 1 |
| Copper | ppm | ASTM D5185m | >330 | 5 | 2 | 23 |
| Tin | ppm | ASTM D5185m | >15 | <1 | <1 | 2 |
| Vanadium | ppm | ASTM D5185m | | 0 | 0 | <1 |
| White Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | NONE | NONE | NONE |

CONTAMINATION

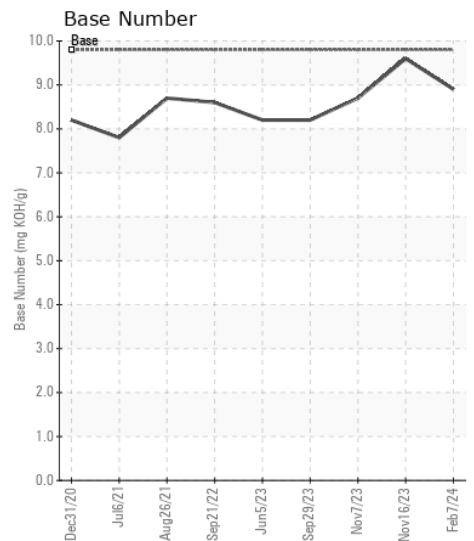
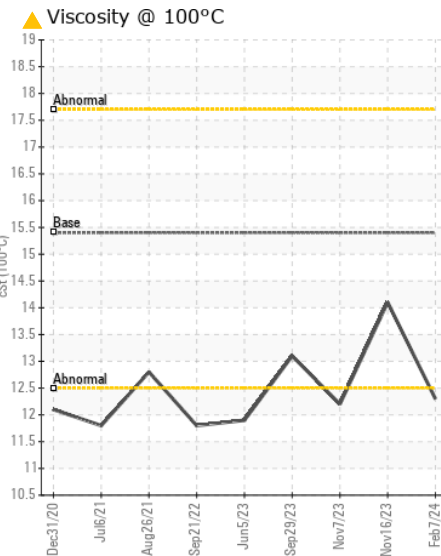
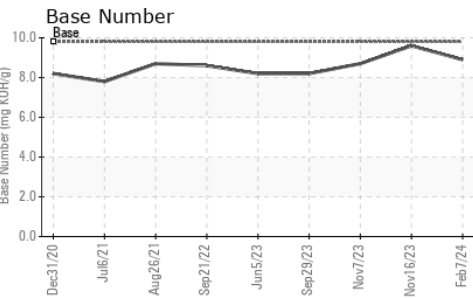
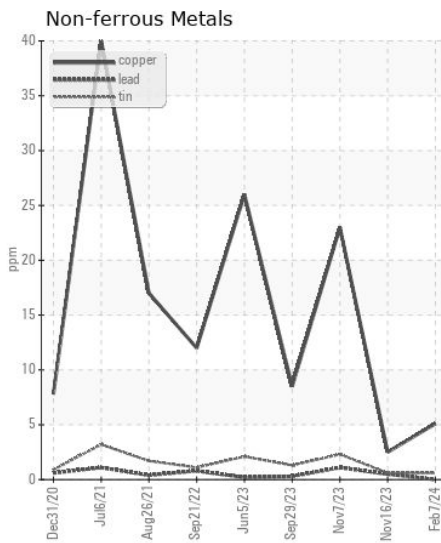
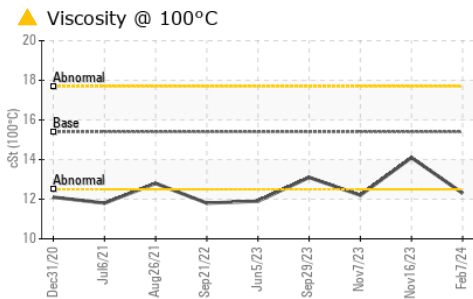
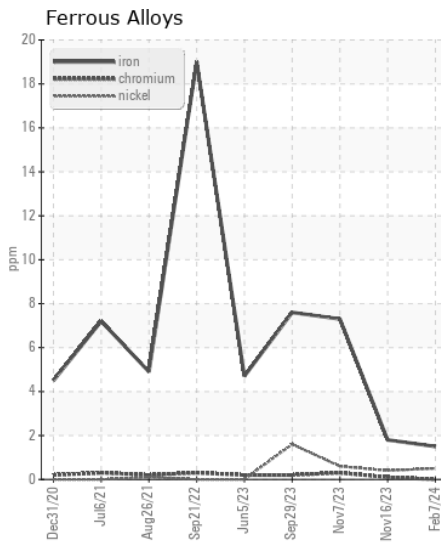
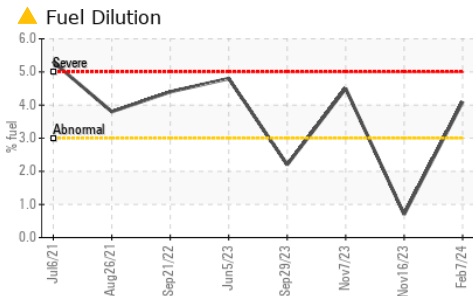
There is a moderate amount of fuel present in the oil. Tests confirm the presence of fuel in the oil.

| | | | | | | |
|------------------|----------|-------------|-------|--------------|-------|-------|
| Silicon | ppm | ASTM D5185m | >25 | 3 | 4 | 6 |
| Potassium | ppm | ASTM D5185m | >20 | <1 | 2 | 2 |
| Fuel | % | ASTM D3524 | >3.0 | ▲ 4.1 | 0.7 | ▲ 4.5 |
| Water | | WC Method | >0.2 | NEG | NEG | NEG |
| Glycol | | WC Method | | NEG | NEG | NEG |
| Soot % | % | *ASTM D7844 | >4 | 0.1 | 0.1 | 0.2 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | 6.3 | 4.5 | 6.8 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | 17.7 | 17.6 | 18.4 |
| 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 |

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.

| | | | | | | |
|------------------|----------|-------------|------|---------------|------|--------|
| Sodium | ppm | ASTM D5185m | | 1 | 0 | 0 |
| Boron | ppm | ASTM D5185m | 0 | 4 | 4 | 2 |
| Barium | ppm | ASTM D5185m | 0 | 0 | 0 | <1 |
| Molybdenum | ppm | ASTM D5185m | 60 | 58 | 59 | 76 |
| Manganese | ppm | ASTM D5185m | 0 | <1 | <1 | <1 |
| Magnesium | ppm | ASTM D5185m | 1010 | 932 | 950 | 1188 |
| Calcium | ppm | ASTM D5185m | 1070 | 1011 | 1090 | 1309 |
| Phosphorus | ppm | ASTM D5185m | 1150 | 1042 | 966 | 1341 |
| Zinc | ppm | ASTM D5185m | 1270 | 1268 | 1199 | 1546 |
| Sulfur | ppm | ASTM D5185m | 2060 | 3173 | 3404 | 3966 |
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | 13.9 | 13.3 | 14.7 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 9.8 | 8.9 | 9.6 | 8.7 |
| Visc @ 100°C | cSt | ASTM D445 | 15.4 | ▲ 12.3 | 14.1 | ▲ 12.2 |



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0103871 **Received** : 13 Feb 2024
Lab Number : 06088022 **Tested** : 15 Feb 2024
Unique Number : 10875467 **Diagnosed** : 15 Feb 2024 - Wes Davis
Test Package : FLEET (Additional Tests: FuelDilution, PercentFuel)

GFL Environmental - 654 - Richmond Hauling
 11800 Lewis Road
 Chester, VA
 US 23831
 Contact: Jimmy Mayes
 jmayes@gflenv.com

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)