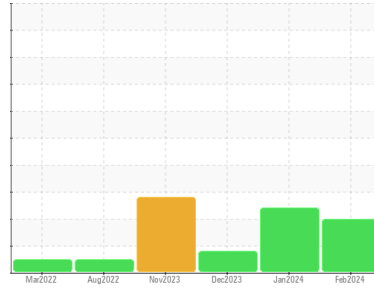




PROBLEM SUMMARY

Sample Rating Trend



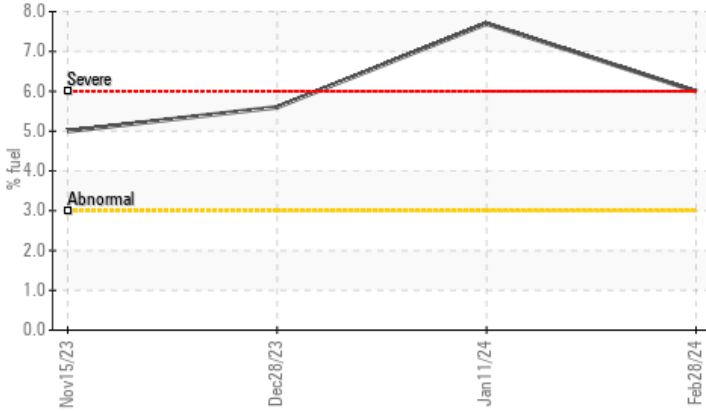
FUEL



Machine Id
4639M
 Component
Diesel Engine
 Fluid
PETRO CANADA DURON SHP 15W40 (36 GAL)

COMPONENT CONDITION SUMMARY

▲ Fuel Dilution



RECOMMENDATION

We advise that you check the fuel injection system. 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.

PROBLEMATIC TEST RESULTS

| Sample Status | | | | SEVERE | SEVERE | ABNORMAL |
|---------------|---|------------|------|---------------|--------|----------|
| Fuel | % | ASTM D3524 | >3.0 | ▲ 6.0 | ▲ 7.7 | ▲ 5.6 |

Customer Id: GFL410
 Sample No.: GFL0104349
 Lab Number: 06109221
 Test Package: FLEET



To manage this report scan the QR code

To discuss the diagnosis or test data:
 Wes Davis +1 905-569-8600 x223
wesd@wearcheck.ca

To change component or sample information:
 Customer Service +1 1-800-237-1369
customerservice@wearcheck.com

RECOMMENDED ACTIONS

| Action | Status | Date | Done By | Description |
|----------------------------|--------|------|---------|---|
| Change Fluid | --- | --- | ? | We recommend that you drain the oil from the component if this has not already been done. |
| Resample | --- | --- | ? | We recommend an early resample to monitor this condition. |
| Check Fuel/injector System | --- | --- | ? | We advise that you check the fuel injection system. |

HISTORICAL DIAGNOSIS

11 Jan 2024 Diag: Wes Davis

FUEL



We advise that you check the fuel injection system. The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition. All component wear rates are normal. There is a high amount of fuel present in the oil. Tests confirm the presence of fuel in the oil. 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.

[view report](#)



28 Dec 2023 Diag: Wes Davis

FUEL



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. All component wear rates are normal. There is a moderate amount of fuel present in the oil. Tests confirm the presence of fuel in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The oil is no longer serviceable due to the presence of contaminants.

[view report](#)



15 Nov 2023 Diag: Don Baldrige

WEAR



We advise that you check the fuel injection system. Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor. Piston, ring and cylinder wear is indicated. There is a moderate amount of fuel present in the oil. Fuel is present in the oil and is lowering the viscosity. The BN result indicates that there is suitable alkalinity remaining in the oil.

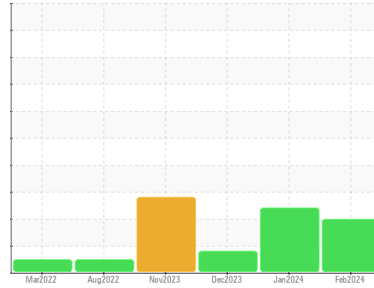
[view report](#)





OIL ANALYSIS REPORT

Sample Rating Trend



FUEL



Machine Id
4639M
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (36 GAL)

DIAGNOSIS

▲ Recommendation

We advise that you check the fuel injection system. 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.

Wear

All component wear rates are normal.

▲ Contamination

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

Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil. The oil is no longer serviceable due to the presence of contaminants.

SAMPLE INFORMATION

| | method | limit/base | current | history1 | history2 |
|---------------|-------------|-------------|--------------------|-------------|-------------|
| Sample Number | Client Info | | GFL0104349 | GFL0110000 | GFL0104396 |
| Sample Date | Client Info | | 28 Feb 2024 | 11 Jan 2024 | 28 Dec 2023 |
| Machine Age | hrs | Client Info | 19120 | 18658 | 18523 |
| Oil Age | hrs | Client Info | 600 | 600 | 18523 |
| Oil Changed | Client Info | | Not Chngd | Changed | N/A |
| Sample Status | | | SEVERE | SEVERE | ABNORMAL |

CONTAMINATION

| | method | limit/base | current | history1 | history2 |
|--------|-----------|------------|------------|----------|----------|
| 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 >75 | 10 | 23 | 16 |
| Chromium | ppm | ASTM D5185m >5 | 0 | <1 | <1 |
| Nickel | ppm | ASTM D5185m >4 | 0 | 0 | 0 |
| Titanium | ppm | ASTM D5185m >2 | 0 | 0 | <1 |
| Silver | ppm | ASTM D5185m >2 | 0 | 0 | <1 |
| Aluminum | ppm | ASTM D5185m >15 | <1 | 1 | 2 |
| Lead | ppm | ASTM D5185m >25 | 0 | <1 | 0 |
| Copper | ppm | ASTM D5185m >100 | 0 | <1 | <1 |
| Tin | ppm | ASTM D5185m >4 | 0 | 0 | 0 |
| Vanadium | ppm | ASTM D5185m | 0 | <1 | 0 |
| Cadmium | ppm | ASTM D5185m | 0 | 0 | 0 |

ADDITIVES

| | method | limit/base | current | history1 | history2 |
|------------|--------|------------------|-------------|----------|----------|
| Boron | ppm | ASTM D5185m 0 | 1 | <1 | 11 |
| Barium | ppm | ASTM D5185m 0 | 1 | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m 60 | 52 | 55 | 54 |
| Manganese | ppm | ASTM D5185m 0 | 0 | <1 | <1 |
| Magnesium | ppm | ASTM D5185m 1010 | 871 | 916 | 862 |
| Calcium | ppm | ASTM D5185m 1070 | 939 | 946 | 953 |
| Phosphorus | ppm | ASTM D5185m 1150 | 966 | 982 | 934 |
| Zinc | ppm | ASTM D5185m 1270 | 1138 | 1182 | 1152 |
| Sulfur | ppm | ASTM D5185m 2060 | 2508 | 2726 | 2651 |

CONTAMINANTS

| | method | limit/base | current | history1 | history2 |
|-----------|--------|-----------------|--------------|----------|----------|
| Silicon | ppm | ASTM D5185m >25 | 2 | 4 | 8 |
| Sodium | ppm | ASTM D5185m | 3 | 6 | 68 |
| Potassium | ppm | ASTM D5185m >20 | 0 | <1 | 2 |
| Fuel | % | ASTM D3524 >3.0 | ▲ 6.0 | ▲ 7.7 | ▲ 5.6 |

INFRA-RED

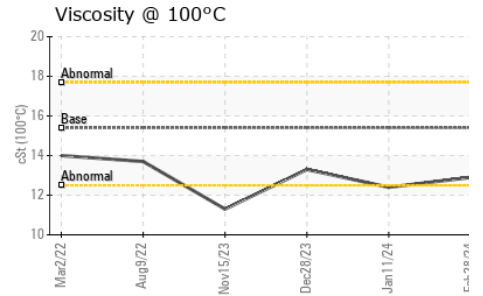
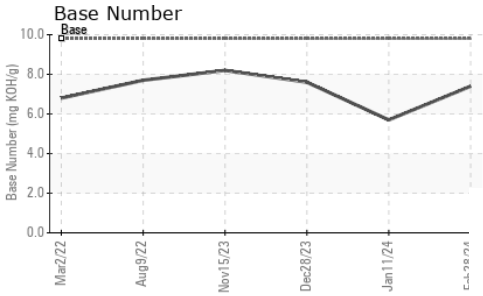
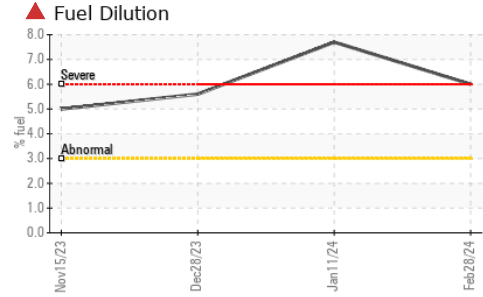
| | method | limit/base | current | history1 | history2 |
|-----------|----------|-----------------|-------------|----------|----------|
| Soot % | % | *ASTM D7844 >6 | 0.4 | 0.6 | 0.4 |
| Nitration | Abs/cm | *ASTM D7624 >20 | 9.9 | 12.2 | 10.2 |
| Sulfation | Abs/.1mm | *ASTM D7415 >30 | 20.2 | 22.8 | 22.1 |

FLUID DEGRADATION

| | method | limit/base | current | history1 | history2 |
|------------------|----------|-----------------|-------------|----------|----------|
| Oxidation | Abs/.1mm | *ASTM D7414 >25 | 18.5 | 23.9 | 21.7 |
| Base Number (BN) | mg KOH/g | ASTM D2896 9.8 | 7.4 | 5.7 | 7.6 |



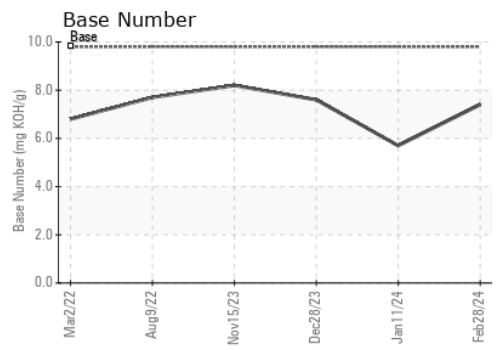
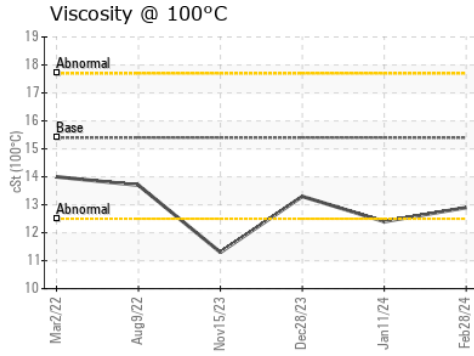
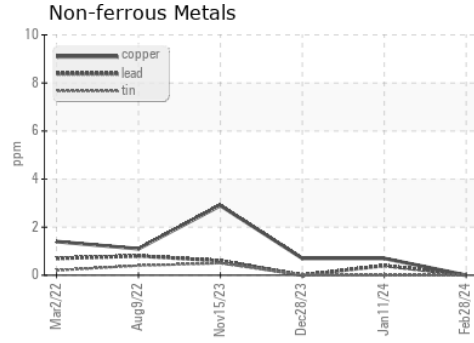
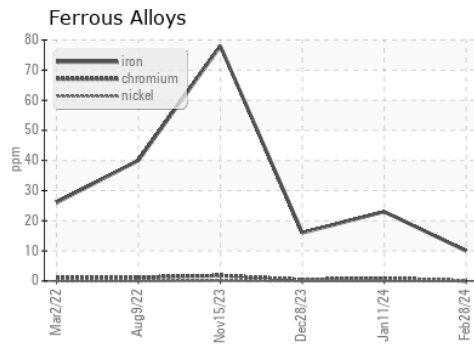
OIL ANALYSIS REPORT



| 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 | 12.9 | 12.4 | 13.3 |

GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0104349 **Received** : 05 Mar 2024
Lab Number : 06109221 **Tested** : 07 Mar 2024
Unique Number : 10912718 **Diagnosed** : 07 Mar 2024 - Wes Davis
Test Package : FLEET (Additional Tests: PercentFuel)

GFL Environmental - 410 - Michigan West
 39000 Van Born Rd
 Wayne, MI
 US 48184
 Contact: Belal Dgheish
 bdgheish@gflenv.com
 T: (734)714-2340
 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)