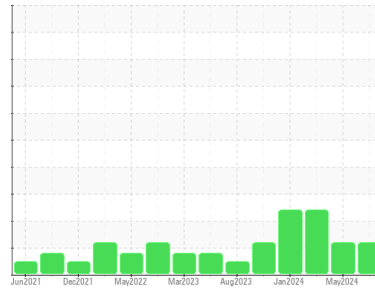




OIL ANALYSIS REPORT

Sample Rating Trend



FUEL



Machine Id

816003

Component

Diesel Engine

Fluid

PETRO CANADA DURON SHP 15W40 (20 LTR)

DIAGNOSIS

Recommendation

The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

Wear

All component wear rates are normal.

Contamination

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

Fluid Condition

The oil is no longer serviceable due to the presence of contaminants.

SAMPLE INFORMATION

| | method | limit/base | current | history1 | history2 |
|---------------|-------------|-------------|--------------------|-------------|-------------|
| Sample Number | Client Info | | GFL0123453 | GFL0116856 | GFL0116840 |
| Sample Date | Client Info | | 11 Jul 2024 | 21 May 2024 | 12 Apr 2024 |
| Machine Age | hrs | Client Info | 0 | 0 | 0 |
| Oil Age | hrs | Client Info | 500 | 500 | 500 |
| Oil Changed | Client Info | | Changed | Changed | Changed |
| Sample Status | | | ABNORMAL | ABNORMAL | SEVERE |

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 D5185(m) | >100 | 16 | 22 | 24 |
| Chromium | ppm | ASTM D5185(m) | >20 | <1 | <1 | <1 |
| Nickel | ppm | ASTM D5185(m) | >4 | <1 | <1 | 0 |
| Titanium | ppm | ASTM D5185(m) | | 0 | 0 | 0 |
| Silver | ppm | ASTM D5185(m) | >3 | 0 | 0 | 0 |
| Aluminum | ppm | ASTM D5185(m) | >20 | 1 | 1 | 2 |
| Lead | ppm | ASTM D5185(m) | >40 | 0 | 0 | 0 |
| Copper | ppm | ASTM D5185(m) | >330 | <1 | <1 | <1 |
| Tin | ppm | ASTM D5185(m) | >15 | 0 | 0 | 0 |
| Antimony | ppm | ASTM D5185(m) | | 0 | 0 | 0 |
| Vanadium | ppm | ASTM D5185(m) | | 0 | 0 | 0 |
| Beryllium | ppm | ASTM D5185(m) | | 0 | 0 | 0 |
| Cadmium | ppm | ASTM D5185(m) | | 0 | 0 | 0 |

ADDITIVES

| | method | limit/base | current | history1 | history2 | |
|------------|--------|---------------|---------|--------------|----------|------|
| Boron | ppm | ASTM D5185(m) | 0 | 3 | 3 | 2 |
| Barium | ppm | ASTM D5185(m) | 0 | 0 | 0 | 0 |
| Molybdenum | ppm | ASTM D5185(m) | 60 | 53 | 53 | 50 |
| Manganese | ppm | ASTM D5185(m) | 0 | <1 | <1 | <1 |
| Magnesium | ppm | ASTM D5185(m) | 1010 | 873 | 870 | 815 |
| Calcium | ppm | ASTM D5185(m) | 1070 | 947 | 946 | 855 |
| Phosphorus | ppm | ASTM D5185(m) | 1150 | 901 | 886 | 836 |
| Zinc | ppm | ASTM D5185(m) | 1270 | 1102 | 1071 | 987 |
| Sulfur | ppm | ASTM D5185(m) | 2060 | 2278 | 2140 | 2012 |
| Lithium | ppm | ASTM D5185(m) | | <1 | <1 | <1 |

CONTAMINANTS

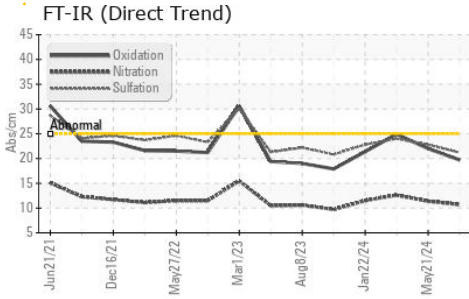
| | method | limit/base | current | history1 | history2 | |
|-----------|--------|---------------|---------|--------------|----------|--------|
| Silicon | ppm | ASTM D5185(m) | >25 | 2 | 3 | 3 |
| Sodium | ppm | ASTM D5185(m) | | 2 | 2 | 3 |
| Potassium | ppm | ASTM D5185(m) | >20 | <1 | <1 | <1 |
| Fuel | % | ASTM D7593* | >5 | ▲ 5.9 | ▲ 6 | ▲ 10.9 |

INFRA-RED

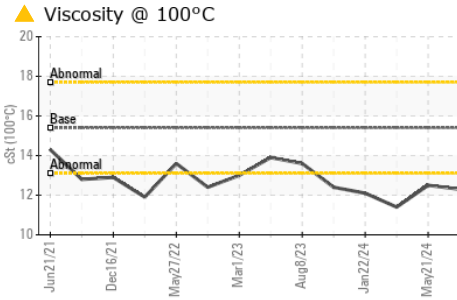
| | method | limit/base | current | history1 | history2 | |
|-----------|----------|-------------|---------|-------------|----------|------|
| Soot % | % | ASTM D7844* | >3 | 0.4 | 0.5 | 0.6 |
| Nitration | Abs/cm | ASTM D7624* | >20 | 10.7 | 11.4 | 12.6 |
| Sulfation | Abs/.1mm | ASTM D7415* | >30 | 21.2 | 22.8 | 24.0 |



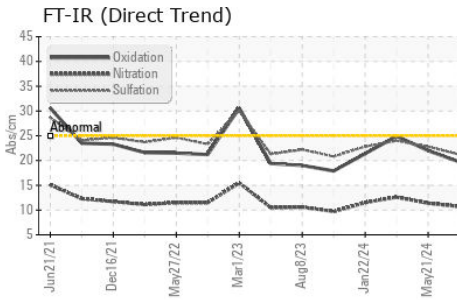
OIL ANALYSIS REPORT



| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|-------------------|---------|-------------|------------|---------|----------|----------|
| Oxidation | Abs/1mm | ASTM D7414* | >25 | 19.7 | 22.0 | 24.9 |

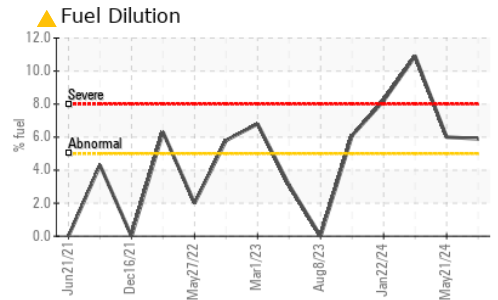
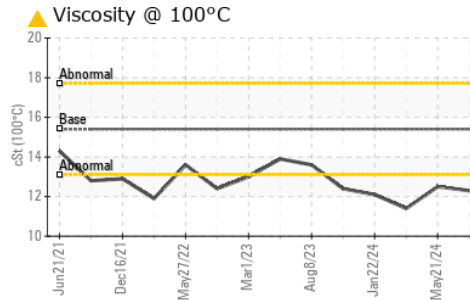
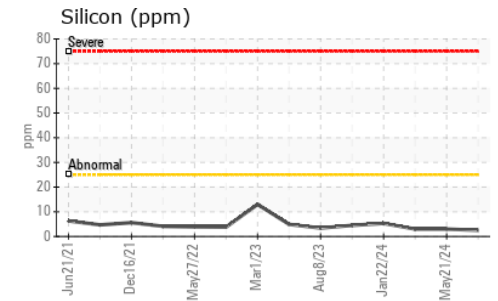
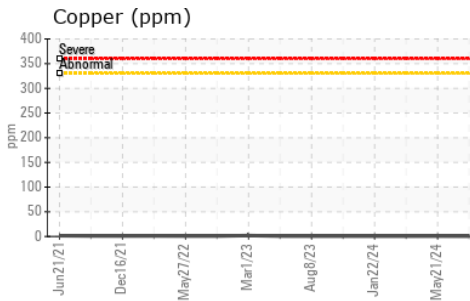
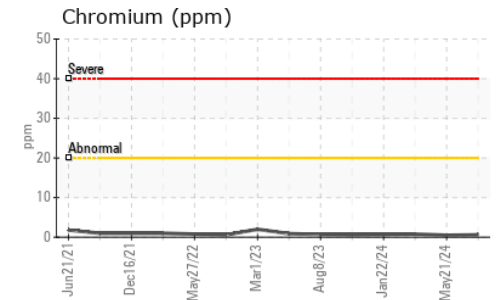
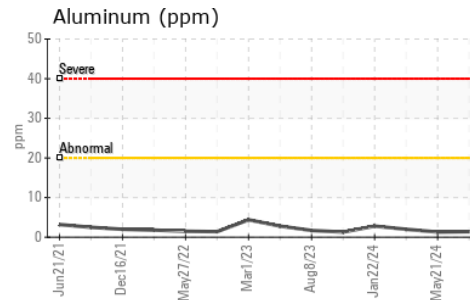
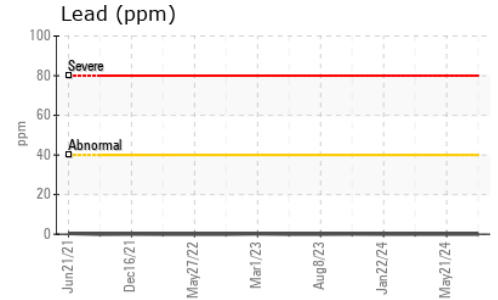
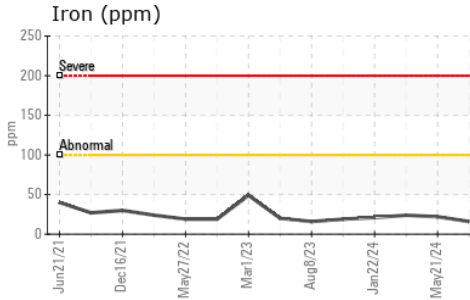


| VISUAL | | method | limit/base | current | history1 | history2 |
|------------------|--------|---------|------------|---------|----------|----------|
| Emulsified Water | scalar | Visual* | >0.2 | NEG | NEG | NEG |
| Free Water | scalar | Visual* | | NEG | NEG | NEG |



| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|------------------|-----|---------------|------------|---------|----------|----------|
| Visc @ 100°C | cSt | ASTM D7279(m) | 15.4 | ▲ 12.3 | ▲ 12.5 | ▲ 11.4 |

GRAPHS



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : GFL0123453
Lab Number : 02647744
Unique Number : 5813296
Test Package : MOB 1 (Additional Tests: PercentFuel)

GFL Environmental - 221 - Windsor
 905 Tecumseh Road W
 Windsor, ON
 CA N8W 4J5
 Contact: Pamela-Jean Butler
 pamelajeane.butler@gflenv.com
 T: (519)948-8126
 F:

Received : 15 Jul 2024
 Tested : 16 Jul 2024
 Diagnosed : 16 Jul 2024 - Wes Davis
 To discuss this sample report, contact Customer Service at 1-800-268-2131.
 Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab.
 Validity of results and interpretation are based on the sample and information as supplied.