



OIL ANALYSIS REPORT

Sample Rating Trend

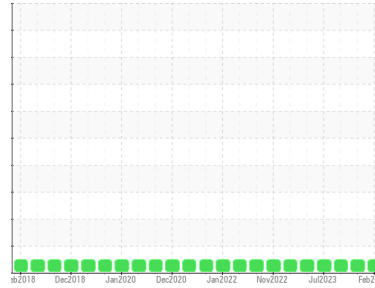
NORMAL



Machine Id
701046

Component
Front Diesel Engine

Fluid
PETRO CANADA DURON SHP 15W40 (20 LTR)



DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

Fluid Condition

The condition of the oil is acceptable for the time in service.

SAMPLE INFORMATION

| method | limit/base | current | history1 | history2 |
|---------------|-------------|--------------------|-------------|-------------|
| Sample Number | Client Info | GFL0110730 | GFL0097456 | GFL0085684 |
| Sample Date | Client Info | 16 Feb 2024 | 20 Nov 2023 | 25 Aug 2023 |
| Machine Age | hrs | Client Info | 9620 | 9620 |
| Oil Age | hrs | Client Info | 9620 | 9620 |
| Oil Changed | Client Info | Changed | Changed | 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 D5185(m) >90 | 12 | 17 | 8 |
| Chromium | ppm ASTM D5185(m) >20 | <1 | <1 | <1 |
| Nickel | ppm ASTM D5185(m) >2 | 0 | <1 | 0 |
| Titanium | ppm ASTM D5185(m) >2 | 0 | 0 | 0 |
| Silver | ppm ASTM D5185(m) >2 | 0 | <1 | 0 |
| Aluminum | ppm ASTM D5185(m) >20 | 2 | 2 | <1 |
| Lead | ppm ASTM D5185(m) >40 | 0 | <1 | 0 |
| Copper | ppm ASTM D5185(m) >330 | 1 | 3 | 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 | 2 | 2 | 2 |
| Barium | ppm ASTM D5185(m) 0 | 0 | <1 | 0 |
| Molybdenum | ppm ASTM D5185(m) 60 | 57 | 57 | 57 |
| Manganese | ppm ASTM D5185(m) 0 | 0 | 0 | <1 |
| Magnesium | ppm ASTM D5185(m) 1010 | 914 | 916 | 943 |
| Calcium | ppm ASTM D5185(m) 1070 | 1007 | 1019 | 1023 |
| Phosphorus | ppm ASTM D5185(m) 1150 | 977 | 935 | 1029 |
| Zinc | ppm ASTM D5185(m) 1270 | 1131 | 1168 | 1172 |
| Sulfur | ppm ASTM D5185(m) 2060 | 2491 | 2264 | 2489 |
| Lithium | ppm ASTM D5185(m) | <1 | <1 | <1 |

CONTAMINANTS

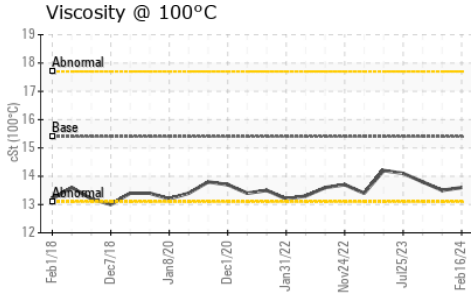
| method | limit/base | current | history1 | history2 |
|-----------|-----------------------|--------------|----------|----------|
| Silicon | ppm ASTM D5185(m) >25 | 2 | 4 | 4 |
| Sodium | ppm ASTM D5185(m) | <1 | 2 | 2 |
| Potassium | ppm ASTM D5185(m) >20 | 1 | 0 | <1 |

INFRA-RED

| method | limit/base | current | history1 | history2 |
|-----------|--------------------------|-------------|----------|----------|
| Soot % | % ASTM D7844* >6 | 0.3 | 0.5 | 0.2 |
| Nitration | Abs/cm ASTM D7624* >20 | 9.2 | 10.0 | 7.9 |
| Sulfation | Abs/.1mm ASTM D7415* >30 | 19.8 | 21.4 | 20.5 |



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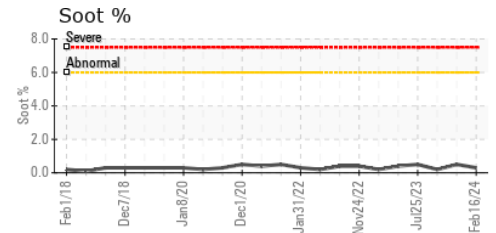
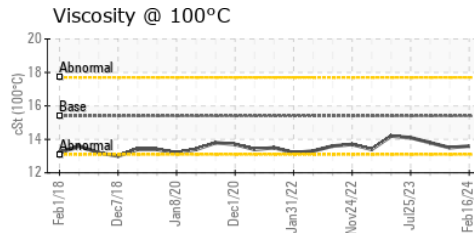
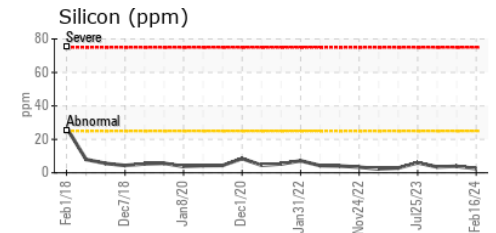
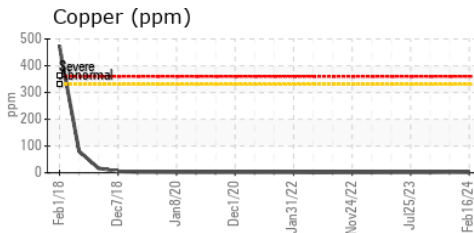
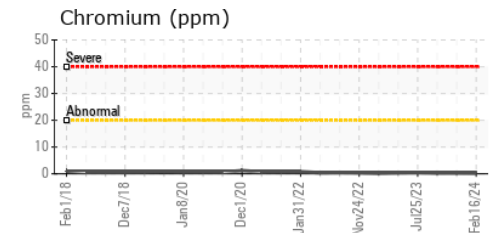
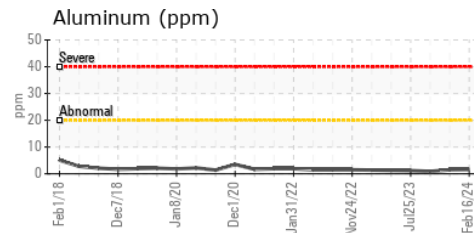
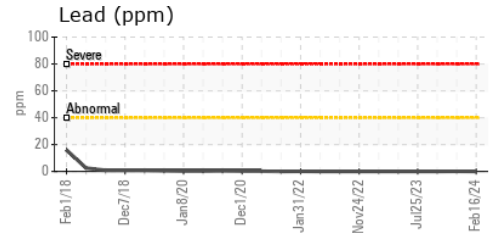
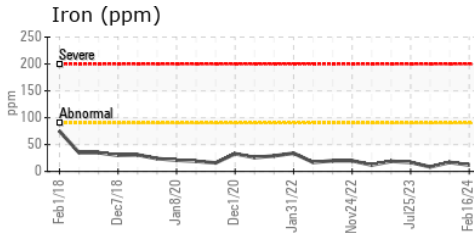


| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|-------------------|----------|-------------|------------|-------------|----------|----------|
| Oxidation | Abs/.1mm | ASTM D7414* | >25 | 16.7 | 18.0 | 15.3 |

| VISUAL | | method | limit/base | current | history1 | history2 |
|------------------|--------|---------|------------|--------------|----------|----------|
| White Metal | scalar | Visual* | NONE | NONE | --- | --- |
| Yellow Metal | scalar | Visual* | NONE | NONE | --- | --- |
| Precipitate | scalar | Visual* | NONE | NONE | --- | --- |
| Silt | scalar | Visual* | NONE | NONE | --- | --- |
| Debris | scalar | Visual* | NONE | NONE | --- | --- |
| Sand/Dirt | scalar | Visual* | NONE | NONE | --- | --- |
| Appearance | scalar | Visual* | NORML | NORML | --- | --- |
| Odor | scalar | Visual* | NORML | NORML | NORML | NORML |
| 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 | 13.6 | 13.5 | 13.8 |

GRAPHS



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : GFL0110730 **Received** : 21 Feb 2024
Lab Number : **02616942** **Tested** : 22 Feb 2024
Unique Number : 5734052 **Diagnosed** : 22 Feb 2024 - Wes Davis
Test Package : MOB 1 (Additional Tests: Visual)

GFL Environmental - 221 - Windsor
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 Windsor, ON
 CA N8W 4J5
 Contact: Rhys Marotte
 rmarotte@gflenv.com

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.

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F: