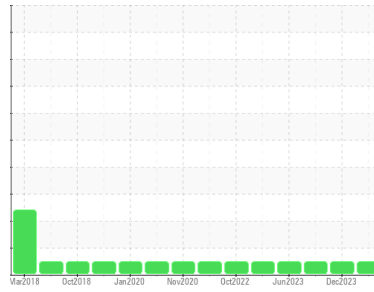




OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Machine Id

801035

Component

Diesel Engine

Fluid

PETRO CANADA DURON SHP 15W40 (22 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 | | GFL0107131 | GFL0091071 | GFL0094203 |
| Sample Date | Client Info | | 24 Apr 2024 | 01 Dec 2023 | 13 Sep 2023 |
| Machine Age | hrs | Client Info | 11952 | 11411 | 86836 |
| Oil Age | hrs | Client Info | 600 | 365 | 0 |
| Oil Changed | Client Info | | Changed | N/A | Changed |
| Sample Status | | | NORMAL | NORMAL | NORMAL |

CONTAMINATION

| | method | limit/base | current | history1 | history2 |
|--------|-----------|------------|----------------|----------|----------|
| Fuel | WC Method | >5 | <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) | >80 | 27 | 14 | 18 |
| Chromium | ppm | ASTM D5185(m) | >5 | <1 | <1 | <1 |
| Nickel | ppm | ASTM D5185(m) | >2 | <1 | <1 | 0 |
| Titanium | ppm | ASTM D5185(m) | | 0 | 0 | 0 |
| Silver | ppm | ASTM D5185(m) | >3 | 0 | <1 | 0 |
| Aluminum | ppm | ASTM D5185(m) | >30 | 4 | 2 | 3 |
| Lead | ppm | ASTM D5185(m) | >30 | 0 | <1 | 0 |
| Copper | ppm | ASTM D5185(m) | >150 | 1 | <1 | 1 |
| Tin | ppm | ASTM D5185(m) | >5 | 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 | 10 | 3 | 2 |
| Barium | ppm | ASTM D5185(m) | 0 | 0 | <1 | 0 |
| Molybdenum | ppm | ASTM D5185(m) | 60 | 62 | 58 | 60 |
| Manganese | ppm | ASTM D5185(m) | 0 | <1 | 0 | <1 |
| Magnesium | ppm | ASTM D5185(m) | 1010 | 967 | 936 | 984 |
| Calcium | ppm | ASTM D5185(m) | 1070 | 1093 | 1022 | 1066 |
| Phosphorus | ppm | ASTM D5185(m) | 1150 | 1014 | 951 | 1064 |
| Zinc | ppm | ASTM D5185(m) | 1270 | 1229 | 1178 | 1217 |
| Sulfur | ppm | ASTM D5185(m) | 2060 | 2350 | 2343 | 2414 |
| Lithium | ppm | ASTM D5185(m) | | <1 | <1 | <1 |

CONTAMINANTS

| | method | limit/base | current | history1 | history2 | |
|-----------|--------|---------------|---------|----------|----------|---|
| Silicon | ppm | ASTM D5185(m) | >20 | 5 | 5 | 7 |
| Sodium | ppm | ASTM D5185(m) | | 9 | 7 | 8 |
| Potassium | ppm | ASTM D5185(m) | >20 | 2 | 2 | 1 |

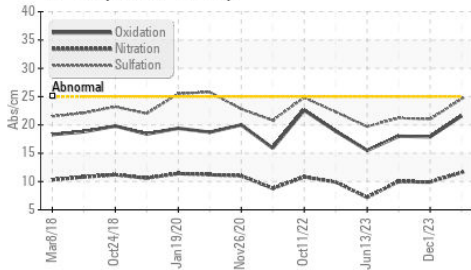
INFRA-RED

| | method | limit/base | current | history1 | history2 | |
|-----------|----------|-------------|---------|-------------|----------|------|
| Soot % | % | ASTM D7844* | >3 | 0.6 | 0.4 | 0.4 |
| Nitration | Abs/cm | ASTM D7624* | >20 | 11.6 | 9.9 | 10.0 |
| Sulfation | Abs./1mm | ASTM D7415* | >30 | 24.6 | 21.0 | 21.2 |

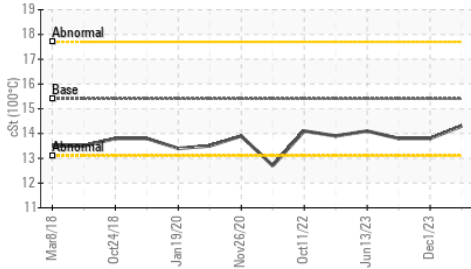


OIL ANALYSIS REPORT

FT-IR (Direct Trend)



Viscosity @ 100°C



FLUID DEGRADATION

| method | limit/base | current | history1 | history2 | |
|-----------|----------------------|---------|----------|----------|------|
| Oxidation | Abs./1mm ASTM D7414* | >25 | 21.6 | 17.9 | 18.0 |

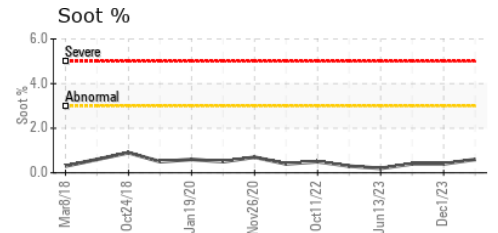
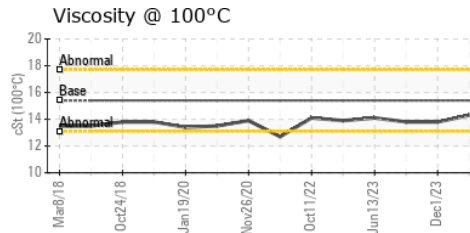
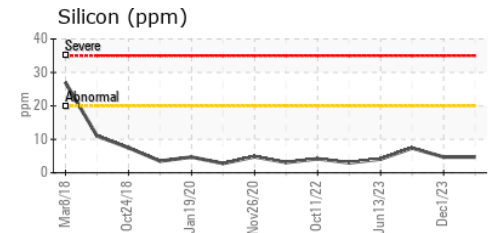
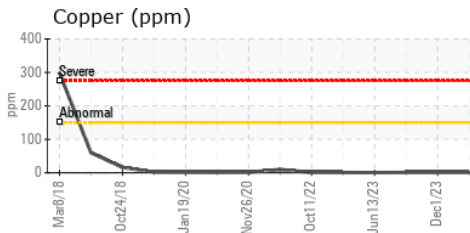
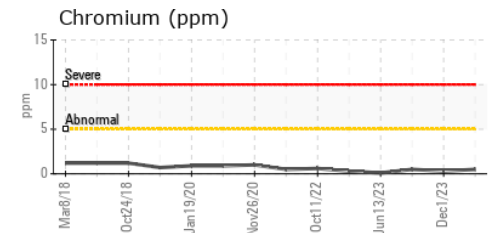
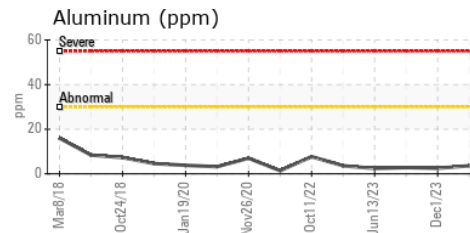
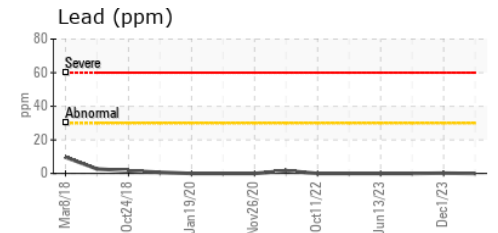
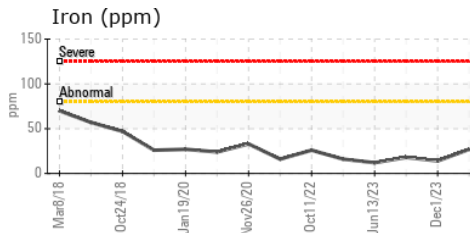
VISUAL

| 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 | 14.3 | 13.8 | 13.8 |

GRAPHS



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : GFL0107131 **Received** : 26 Apr 2024
Lab Number : 02631554 **Tested** : 26 Apr 2024
Unique Number : 5772707 **Diagnosed** : 26 Apr 2024 - Wes Davis
Test Package : MOB 1 (Additional Tests: Visual)

GFL Environmental - 217 - Aurora
 14131 BAYVIEW AVE, AURORA YARD
 AURORA, ON
 CA L4G 0K6
 Contact: Mike Havens
 MHavens@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.

T:
 F: (905)713-2445