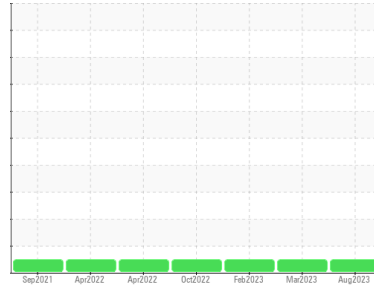




OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL



Machine Id
830013
 Component
Diesel Engine
 Fluid
PETRO CANADA DURON GEO LD 15W40 (--- GAL)

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 | GFL0084175 | GFL0063625 | GFL0063616 |
| Sample Date | Client Info | 14 Aug 2023 | 31 Mar 2023 | 02 Feb 2023 |
| Machine Age | hrs | 6378 | 5572 | 14245 |
| Oil Age | hrs | 600 | 600 | 600 |
| Oil Changed | Client Info | Changed | Changed | Changed |
| Sample Status | | NORMAL | NORMAL | NORMAL |

CONTAMINATION

| method | limit/base | current | history1 | history2 |
|--------|--------------|----------------|----------|----------|
| Fuel | WC Method >5 | <1.0 | <1.0 | <1.0 |
| Glycol | WC Method | NEG | NEG | NEG |

WEAR METALS

| method | limit/base | current | history1 | history2 |
|-----------|------------------------|--------------|----------|----------|
| Iron | ppm ASTM D5185(m) >80 | 10 | 14 | 15 |
| Chromium | ppm ASTM D5185(m) >5 | 1 | 1 | 1 |
| Nickel | ppm ASTM D5185(m) >2 | 0 | <1 | <1 |
| Titanium | ppm ASTM D5185(m) | 0 | <1 | <1 |
| Silver | ppm ASTM D5185(m) >3 | 0 | 0 | 0 |
| Aluminum | ppm ASTM D5185(m) >30 | 1 | 2 | 2 |
| Lead | ppm ASTM D5185(m) >30 | <1 | <1 | 7 |
| Copper | ppm ASTM D5185(m) >150 | <1 | 1 | 2 |
| Tin | ppm ASTM D5185(m) >5 | <1 | <1 | <1 |
| 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) 50 | 10 | 14 | 4 |
| Barium | ppm ASTM D5185(m) 5 | 0 | 0 | 0 |
| Molybdenum | ppm ASTM D5185(m) 50 | 54 | 57 | 54 |
| Manganese | ppm ASTM D5185(m) 0 | <1 | <1 | <1 |
| Magnesium | ppm ASTM D5185(m) 560 | 575 | 608 | 577 |
| Calcium | ppm ASTM D5185(m) 1510 | 1640 | 1821 | 1619 |
| Phosphorus | ppm ASTM D5185(m) 780 | 710 | 837 | 785 |
| Zinc | ppm ASTM D5185(m) 870 | 934 | 1018 | 951 |
| Sulfur | ppm ASTM D5185(m) 2040 | 2048 | 2193 | 2178 |
| Lithium | ppm ASTM D5185(m) | <1 | <1 | <1 |

CONTAMINANTS

| method | limit/base | current | history1 | history2 |
|-----------|-----------------------|--------------|----------|----------|
| Silicon | ppm ASTM D5185(m) >20 | 3 | 4 | 3 |
| Sodium | ppm ASTM D5185(m) | 2 | 8 | 4 |
| Potassium | ppm ASTM D5185(m) >20 | <1 | <1 | <1 |

INFRA-RED

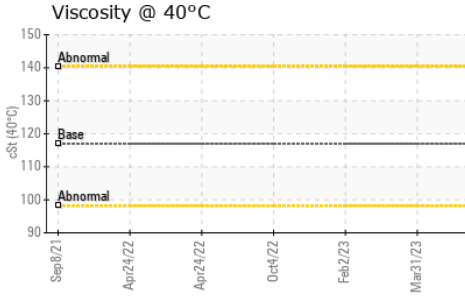
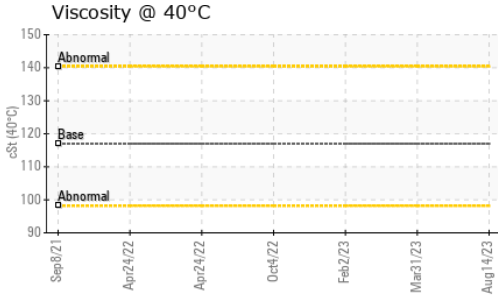
| method | limit/base | current | history1 | history2 |
|-----------|--------------------------|-------------|----------|----------|
| Soot % | % ASTM D7844* >3 | 0 | 0 | 0 |
| Nitration | Abs/cm ASTM D7624* >20 | 11.1 | 11.8 | 7.9 |
| Sulfation | Abs/.1mm ASTM D7415* >30 | 23.3 | 23.5 | 20.4 |

FLUID DEGRADATION

| method | limit/base | current | history1 | history2 |
|-----------|--------------------------|-------------|----------|----------|
| Oxidation | Abs/.1mm ASTM D7414* >25 | 17.8 | 18.4 | 12.9 |



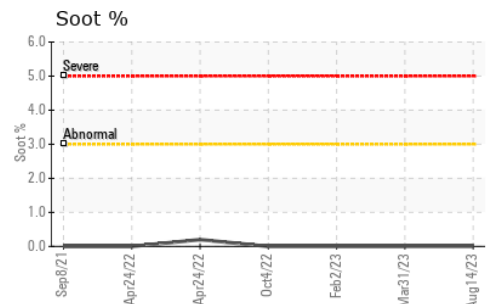
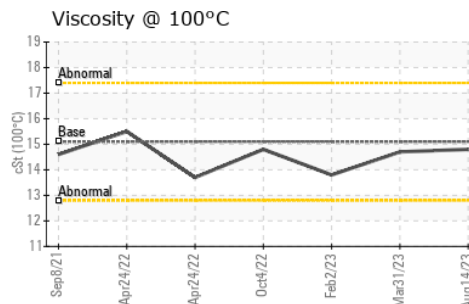
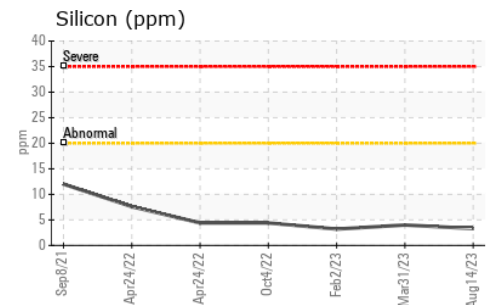
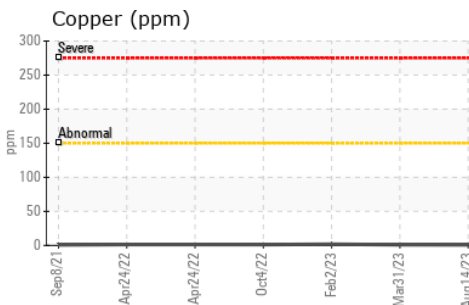
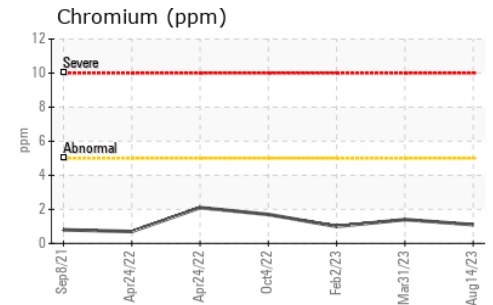
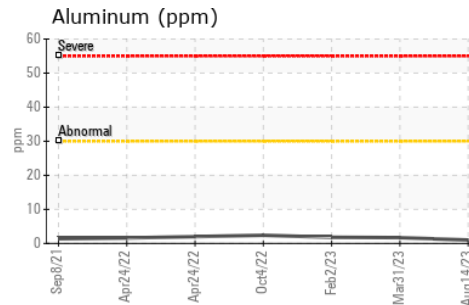
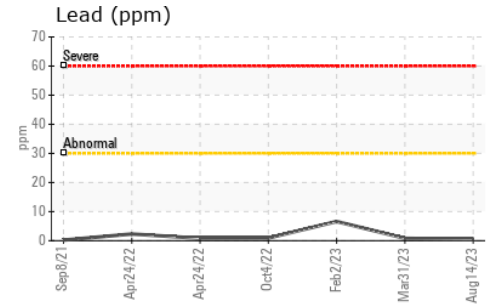
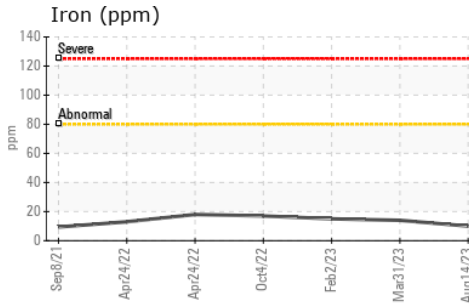
OIL ANALYSIS REPORT



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

| FLUID PROPERTIES | method | limit/base | current | history1 | history2 |
|----------------------|--------|---------------|---------|----------|----------|
| Visc @ 40°C | cSt | ASTM D7279(m) | 117.0 | 116 | --- |
| Visc @ 100°C | cSt | ASTM D7279(m) | 15.1 | 14.8 | 14.7 |
| Viscosity Index (VI) | Scale | ASTM D2270* | 134 | 131 | --- |

GRAPHS



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 GFL Environmental - 573 - Vancouver Hauling
Sample No. : GFL0084175 **Received** : 08 Sep 2023
Lab Number : 02581090 **Diagnosed** : 08 Sep 2023
Unique Number : 5642155 **Diagnostician** : Wes Davis
Test Package : MOB 1 (Additional Tests: KV40, VI)

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.

Contact: Catia Klagenberg Alves
 cklagenbergalves@gflenv.com

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