



OIL ANALYSIS REPORT

Sample Rating Trend

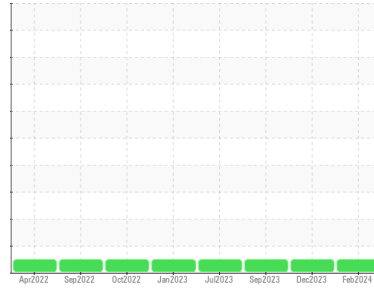
NORMAL



Machine Id
128047

Component
Diesel Engine

Fluid
PETRO CANADA DURON XL SYN BLEND 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 BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORMATION

| | method | limit/base | current | history1 | history2 |
|---------------|-------------|-------------|--------------------|-------------|-------------|
| Sample Number | Client Info | | GFL0112391 | GFL0099535 | GFL0091611 |
| Sample Date | Client Info | | 27 Feb 2024 | 26 Dec 2023 | 12 Sep 2023 |
| Machine Age | mls | Client Info | 0 | 281266 | 0 |
| Oil Age | mls | Client Info | 0 | 0 | 0 |
| 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 |
| 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 | 20 | 36 | 24 |
| Chromium | ppm | ASTM D5185(m) | >20 | <1 | 1 | 1 |
| Nickel | ppm | ASTM D5185(m) | >4 | <1 | <1 | <1 |
| Titanium | ppm | ASTM D5185(m) | | 0 | 0 | 0 |
| Silver | ppm | ASTM D5185(m) | >3 | 0 | 0 | <1 |
| Aluminum | ppm | ASTM D5185(m) | >20 | 3 | 5 | 3 |
| Lead | ppm | ASTM D5185(m) | >40 | <1 | <1 | <1 |
| 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) | 1 | 5 | 7 | 4 |
| Barium | ppm | ASTM D5185(m) | 1 | 0 | 0 | 0 |
| Molybdenum | ppm | ASTM D5185(m) | 60 | 61 | 66 | 65 |
| Manganese | ppm | ASTM D5185(m) | 1 | 0 | 0 | <1 |
| Magnesium | ppm | ASTM D5185(m) | 1010 | 1018 | 1073 | 1096 |
| Calcium | ppm | ASTM D5185(m) | 1070 | 1182 | 1329 | 1201 |
| Phosphorus | ppm | ASTM D5185(m) | 1150 | 1039 | 1076 | 1132 |
| Zinc | ppm | ASTM D5185(m) | 1270 | 1228 | 1331 | 1306 |
| Sulfur | ppm | ASTM D5185(m) | 2060 | 2706 | 2614 | 2547 |
| Lithium | ppm | ASTM D5185(m) | | <1 | <1 | <1 |

CONTAMINANTS

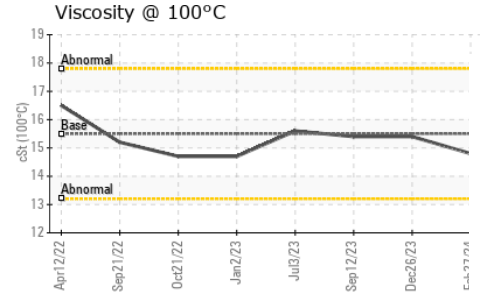
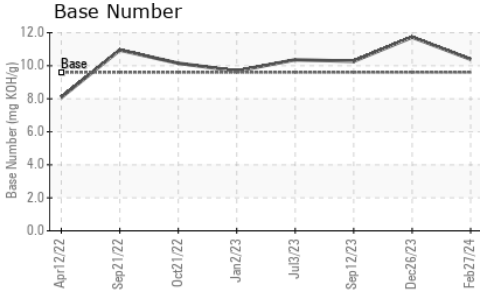
| | method | limit/base | current | history1 | history2 | |
|-----------|--------|---------------|---------|--------------|----------|----|
| Silicon | ppm | ASTM D5185(m) | >25 | 5 | 5 | 5 |
| Sodium | ppm | ASTM D5185(m) | | 1 | 2 | 2 |
| Potassium | ppm | ASTM D5185(m) | >20 | <1 | 0 | <1 |

INFRA-RED

| | method | limit/base | current | history1 | history2 | |
|-----------|---------|-------------|---------|-------------|----------|------|
| Soot % | % | ASTM D7844* | >3 | 0.1 | 0.5 | 0.3 |
| Nitration | Abs/cm | ASTM D7624* | >20 | 6.8 | 9.2 | 8.1 |
| Sulfation | Abs.1mm | ASTM D7415* | >30 | 20.3 | 22.7 | 21.0 |



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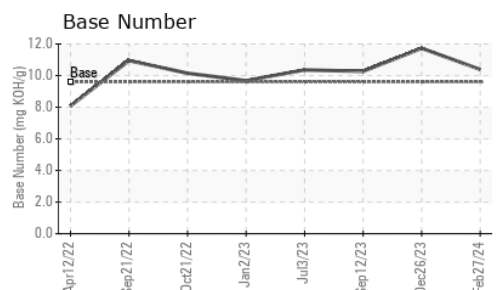
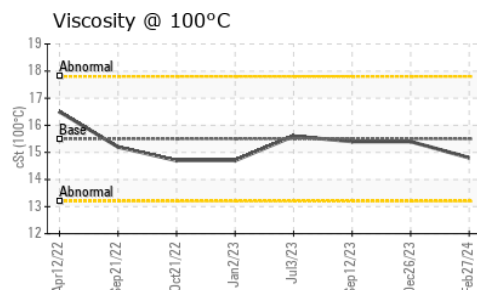
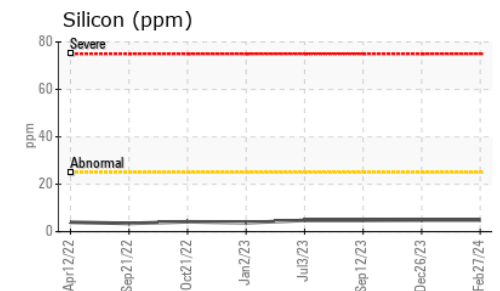
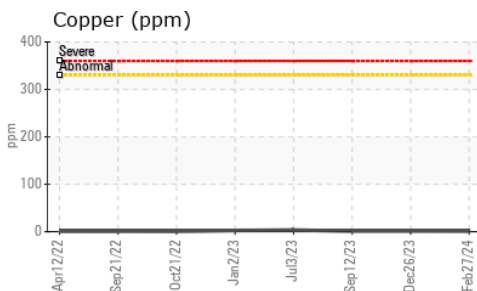
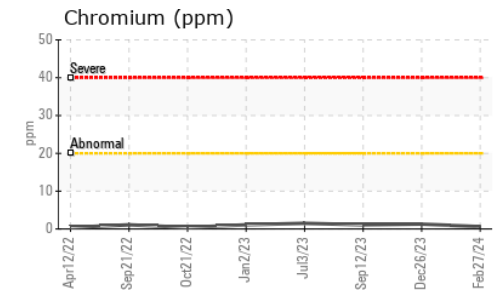
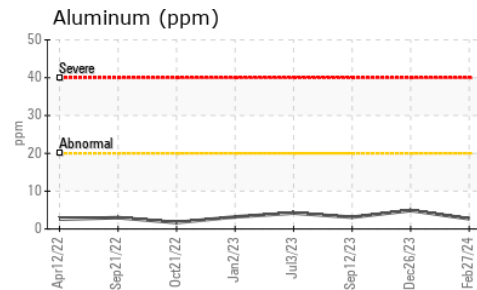
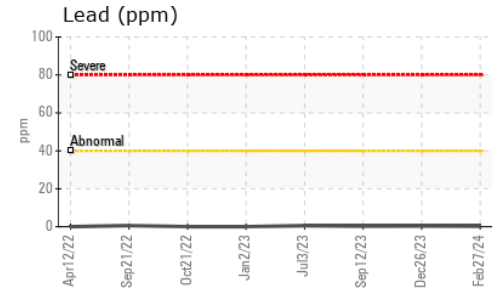
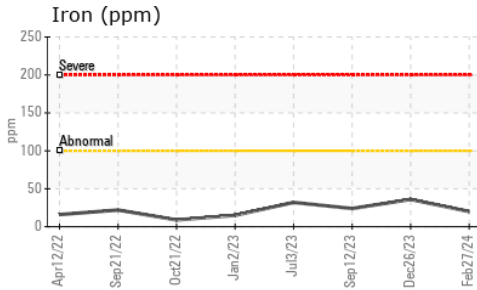


| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|-------------------|----------|-------------|------------|--------------|----------|----------|
| Oxidation | Abs/.1mm | ASTM D7414* | >25 | 16.6 | 19.8 | 17.8 |
| Base Number (BN) | mg KOH/g | ASTM D2896* | 9.6 | 10.39 | 11.73 | 10.27 |

| 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) | 15.5 | 14.8 | 15.4 | 15.4 |

GRAPHS



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 **GFL Environmental - 550 - Rocky View County**
Sample No. : GFL0112391 **Received** : 04 Mar 2024 **220 Carmek Blvd**
Lab Number : **02619526** **Tested** : 05 Mar 2024 **Rocky View County, AB**
Unique Number : 5736636 **Diagnosed** : 05 Mar 2024 - Kevin Marson **CA T1X 1X1**
Test Package : MOB 2 **Contact: GFL Calgary**
calgarymaintenance@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. **F: (403)369-6163**