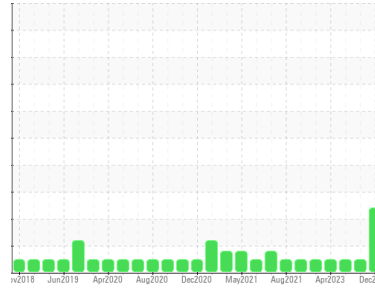




# OIL ANALYSIS REPORT

Sample Rating Trend



**WATER**



Machine Id  
**1023AC**  
Component  
**Natural Gas Engine**  
Fluid  
**PETRO CANADA DURON GEO LD 15W40 (11 GAL)**

## DIAGNOSIS

### Recommendation

We advise that you check for the source of water entry. Oil and filter 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

Appearance is milky. There is a moderate concentration of water present in the oil.

### Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil.

## SAMPLE INFORMATION

| method        | limit/base  | current            | history1    | history2    |
|---------------|-------------|--------------------|-------------|-------------|
| Sample Number | Client Info | <b>GFL0102482</b>  | GFL0095153  | GFL0087211  |
| Sample Date   | Client Info | <b>22 Dec 2023</b> | 05 Oct 2023 | 07 Jul 2023 |
| Machine Age   | hrs         | Client Info        | 0           | 27513       |
| Oil Age       | hrs         | Client Info        | 0           | 1200        |
| Oil Changed   | Client Info | <b>Changed</b>     | Not Changd  | Changed     |
| Sample Status |             | <b>ABNORMAL</b>    | NORMAL      | NORMAL      |

## WEAR METALS

| method   | limit/base | current         | history1     | history2 |    |
|----------|------------|-----------------|--------------|----------|----|
| Iron     | ppm        | ASTM D5185m >50 | <b>8</b>     | 29       | 22 |
| Chromium | ppm        | ASTM D5185m >4  | <b>0</b>     | 3        | <1 |
| Nickel   | ppm        | ASTM D5185m >2  | <b>&lt;1</b> | 1        | <1 |
| Titanium | ppm        | ASTM D5185m     | <b>0</b>     | <1       | <1 |
| Silver   | ppm        | ASTM D5185m >3  | <b>&lt;1</b> | 0        | 0  |
| Aluminum | ppm        | ASTM D5185m >9  | <b>1</b>     | 0        | 2  |
| Lead     | ppm        | ASTM D5185m >30 | <b>1</b>     | 6        | <1 |
| Copper   | ppm        | ASTM D5185m >35 | <b>1</b>     | <1       | 2  |
| Tin      | ppm        | ASTM D5185m >4  | <b>&lt;1</b> | <1       | <1 |
| Vanadium | ppm        | ASTM D5185m     | <b>0</b>     | 0        | <1 |
| Cadmium  | ppm        | ASTM D5185m     | <b>&lt;1</b> | 0        | <1 |

## ADDITIVES

| method     | limit/base | current          | history1     | history2 |      |
|------------|------------|------------------|--------------|----------|------|
| Boron      | ppm        | ASTM D5185m 50   | <b>47</b>    | 39       | 38   |
| Barium     | ppm        | ASTM D5185m 5    | <b>0</b>     | <1       | 0    |
| Molybdenum | ppm        | ASTM D5185m 50   | <b>48</b>    | 58       | 51   |
| Manganese  | ppm        | ASTM D5185m 0    | <b>&lt;1</b> | 1        | 1    |
| Magnesium  | ppm        | ASTM D5185m 560  | <b>572</b>   | 527      | 502  |
| Calcium    | ppm        | ASTM D5185m 1510 | <b>1566</b>  | 1498     | 1426 |
| Phosphorus | ppm        | ASTM D5185m 780  | <b>860</b>   | 747      | 679  |
| Zinc       | ppm        | ASTM D5185m 870  | <b>995</b>   | 960      | 849  |
| Sulfur     | ppm        | ASTM D5185m 2040 | <b>2708</b>  | 2719     | 2742 |

## CONTAMINANTS

| method    | limit/base | current           | history1       | history2 |     |
|-----------|------------|-------------------|----------------|----------|-----|
| Silicon   | ppm        | ASTM D5185m >+100 | <b>8</b>       | 15       | 10  |
| Sodium    | ppm        | ASTM D5185m       | <b>6</b>       | 5        | 10  |
| Potassium | ppm        | ASTM D5185m >20   | <b>0</b>       | 3        | 4   |
| Water     | %          | ASTM D6304 >0.1   | <b>▲ 0.354</b> | ---      | --- |
| ppm Water | ppm        | ASTM D6304 >1000  | <b>▲ 3540</b>  | ---      | --- |

## INFRA-RED

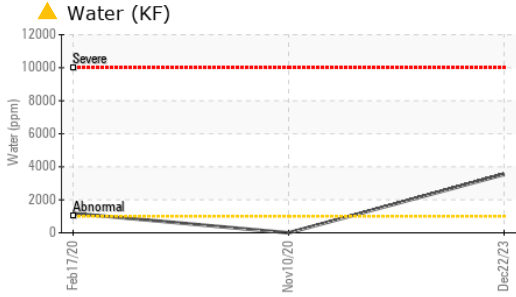
| method    | limit/base | current         | history1    | history2 |      |
|-----------|------------|-----------------|-------------|----------|------|
| Soot %    | %          | *ASTM D7844     | <b>0.1</b>  | 0        | 0.1  |
| Nitration | Abs/cm     | *ASTM D7624 >20 | <b>7.2</b>  | 8.3      | 7.5  |
| Sulfation | Abs/1mm    | *ASTM D7415 >30 | <b>18.1</b> | 21.4     | 18.7 |

## FLUID DEGRADATION

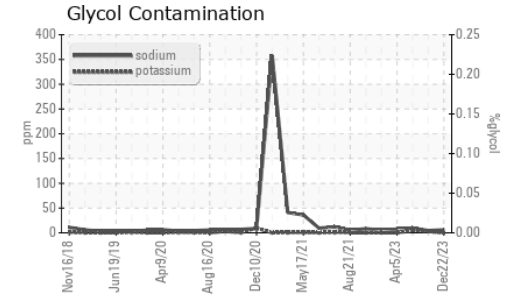
| method           | limit/base | current         | history1    | history2 |      |
|------------------|------------|-----------------|-------------|----------|------|
| Oxidation        | Abs/1mm    | *ASTM D7414 >25 | <b>15.5</b> | 17.7     | 15.2 |
| Base Number (BN) | mg KOH/g   | ASTM D2896 10.2 | <b>9.8</b>  | 6.0      | 8.2  |



# OIL ANALYSIS REPORT

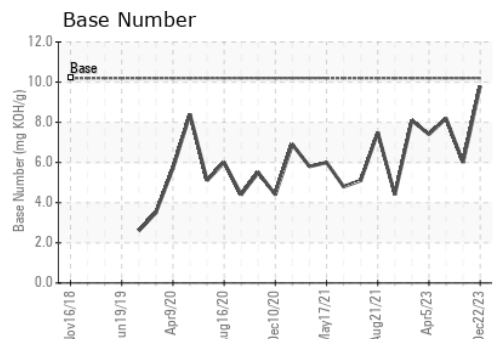
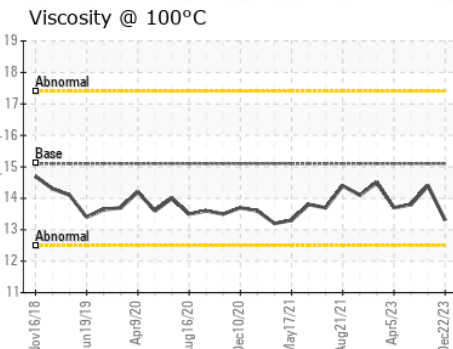
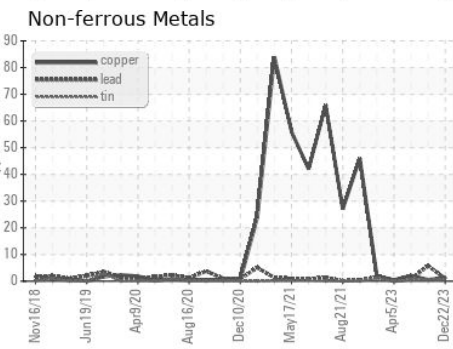
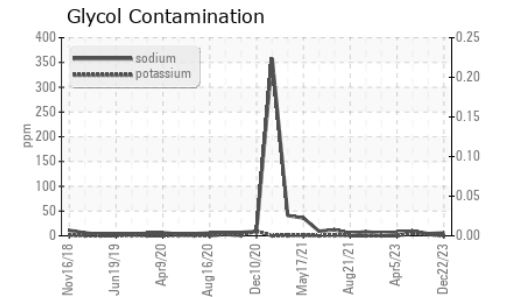
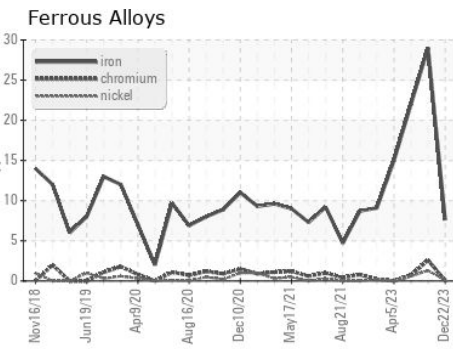
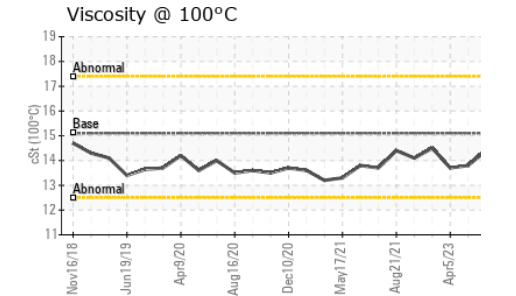


| VISUAL           | method | limit/base | current | history1     | history2 |
|------------------|--------|------------|---------|--------------|----------|
| White Metal      | scalar | *Visual    | NONE    | NONE         | NONE     |
| Yellow Metal     | scalar | *Visual    | NONE    | NONE         | NONE     |
| Precipitate      | scalar | *Visual    | NONE    | NONE         | NONE     |
| Silt             | scalar | *Visual    | NONE    | NONE         | NONE     |
| Debris           | scalar | *Visual    | NONE    | <b>LIGHT</b> | NONE     |
| Sand/Dirt        | scalar | *Visual    | NONE    | <b>NONE</b>  | NONE     |
| Appearance       | scalar | *Visual    | NORML   | <b>MILKY</b> | NORML    |
| Odor             | scalar | *Visual    | NORML   | <b>NORML</b> | NORML    |
| Emulsified Water | scalar | *Visual    | >0.1    | <b>0.2%</b>  | NEG      |
| Free Water       | scalar | *Visual    |         | <b>NEG</b>   | NEG      |



| FLUID PROPERTIES | method | limit/base | current | history1    | history2 |
|------------------|--------|------------|---------|-------------|----------|
| Visc @ 100°C     | cSt    | ASTM D445  | 15.1    | <b>13.3</b> | 14.4     |

## GRAPHS



**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : GFL0102482 **Received** : 08 Jan 2024  
**Lab Number** : **06054564** **Diagnosed** : 10 Jan 2024  
**Unique Number** : 10820513 **Diagnostician** : Jonathan Hester  
**Test Package** : FLEET ( Additional Tests: Glycol, KF )

**GFL Environmental - 836 - Kansas City Hauling**  
 7801 East Truman Road  
 Kansas City, MO  
 US 64126  
 Contact: Robert Hart  
 rhart@gflenv.com  
 T: (580)461-1509  
 F:

To discuss this sample report, contact Customer Service at 1-800-237-1369.

\* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)