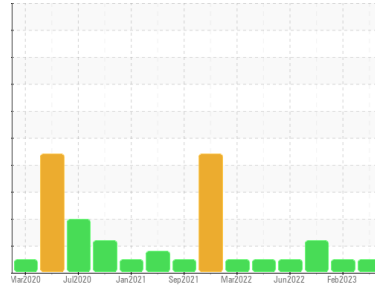




# OIL ANALYSIS REPORT

Sample Rating Trend



**NORMAL**



Machine Id  
**11322 PETERBILT 330**  
 Component  
**Diesel Engine**  
 Fluid  
**PETRO CANADA DURON SHP 15W40 (20 QTS)**

## 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 |             | <b>GFL0087111</b>  | GFL0056580  | GFL0056524  |
| Sample Date   | Client Info |             | <b>09 Aug 2023</b> | 20 Feb 2023 | 14 Oct 2022 |
| Machine Age   | hrs         | Client Info | <b>10110</b>       | 9288        | 8724        |
| Oil Age       | hrs         | Client Info | <b>822</b>         | 564         | 728         |
| Oil Changed   | Client Info |             | <b>Changed</b>     | Changed     | Changed     |
| Sample Status |             |             | <b>NORMAL</b>      | NORMAL      | ATTENTION   |

## CONTAMINATION

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

## WEAR METALS

|          | method | limit/base       | current      | history1 | history2 |
|----------|--------|------------------|--------------|----------|----------|
| Iron     | ppm    | ASTM D5185m >110 | <b>14</b>    | 22       | 33       |
| Chromium | ppm    | ASTM D5185m >4   | <b>&lt;1</b> | 0        | 1        |
| Nickel   | ppm    | ASTM D5185m >2   | <b>&lt;1</b> | 0        | 0        |
| Titanium | ppm    | ASTM D5185m      | <b>0</b>     | 0        | 0        |
| Silver   | ppm    | ASTM D5185m >2   | <b>0</b>     | 0        | 0        |
| Aluminum | ppm    | ASTM D5185m >25  | <b>5</b>     | 7        | 17       |
| Lead     | ppm    | ASTM D5185m >45  | <b>&lt;1</b> | 0        | <1       |
| Copper   | ppm    | ASTM D5185m >85  | <b>1</b>     | 0        | 2        |
| Tin      | ppm    | ASTM D5185m >4   | <b>&lt;1</b> | 0        | <1       |
| Vanadium | ppm    | ASTM D5185m      | <b>0</b>     | 0        | 0        |
| Cadmium  | ppm    | ASTM D5185m      | <b>0</b>     | 0        | 0        |

## ADDITIVES

|            | method | limit/base       | current      | history1 | history2 |
|------------|--------|------------------|--------------|----------|----------|
| Boron      | ppm    | ASTM D5185m 0    | <b>4</b>     | 5        | 0        |
| Barium     | ppm    | ASTM D5185m 0    | <b>0</b>     | 0        | 0        |
| Molybdenum | ppm    | ASTM D5185m 60   | <b>62</b>    | 56       | 66       |
| Manganese  | ppm    | ASTM D5185m 0    | <b>&lt;1</b> | <1       | <1       |
| Magnesium  | ppm    | ASTM D5185m 1010 | <b>904</b>   | 848      | 836      |
| Calcium    | ppm    | ASTM D5185m 1070 | <b>1066</b>  | 1062     | 1321     |
| Phosphorus | ppm    | ASTM D5185m 1150 | <b>1006</b>  | 885      | 980      |
| Zinc       | ppm    | ASTM D5185m 1270 | <b>1256</b>  | 1131     | 1244     |
| Sulfur     | ppm    | ASTM D5185m 2060 | <b>3653</b>  | 3044     | 3729     |

## CONTAMINANTS

|           | method | limit/base      | current  | history1 | history2 |
|-----------|--------|-----------------|----------|----------|----------|
| Silicon   | ppm    | ASTM D5185m >30 | <b>4</b> | 4        | 6        |
| Sodium    | ppm    | ASTM D5185m     | <b>7</b> | 14       | ▲ 85     |
| Potassium | ppm    | ASTM D5185m >20 | <b>5</b> | 12       | 33       |

## INFRA-RED

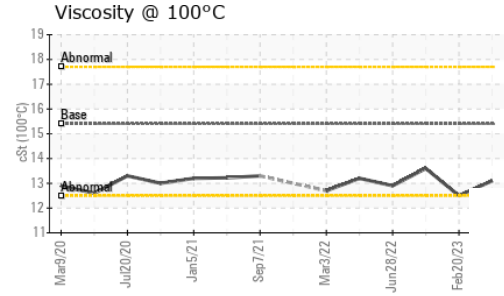
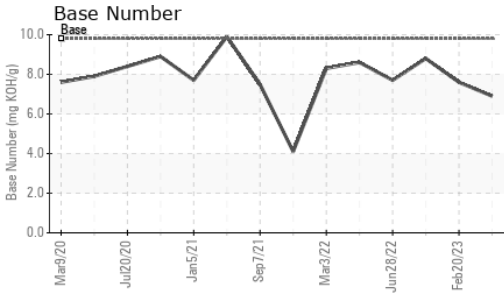
|           | method   | limit/base      | current     | history1 | history2 |
|-----------|----------|-----------------|-------------|----------|----------|
| Soot %    | %        | *ASTM D7844 >3  | <b>0.3</b>  | 0.4      | 0.6      |
| Nitration | Abs/cm   | *ASTM D7624 >20 | <b>9.1</b>  | 10.0     | 12.4     |
| Sulfation | Abs/.1mm | *ASTM D7415 >30 | <b>19.3</b> | 20.0     | 23.2     |

## FLUID DEGRADATION

|                  | method   | limit/base      | current     | history1 | history2 |
|------------------|----------|-----------------|-------------|----------|----------|
| Oxidation        | Abs/.1mm | *ASTM D7414 >25 | <b>17.0</b> | 18.0     | 20.9     |
| Base Number (BN) | mg KOH/g | ASTM D2896 9.8  | <b>6.9</b>  | 7.6      | 8.8      |



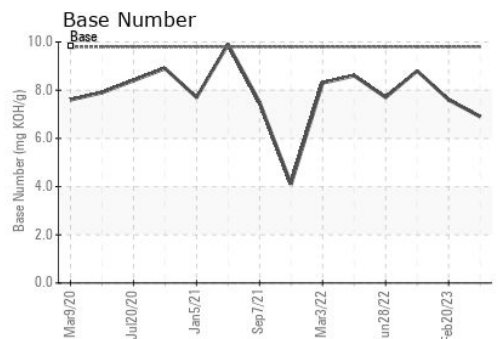
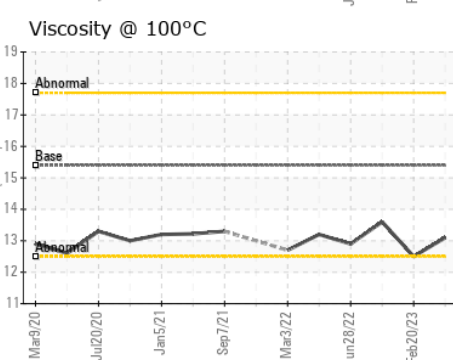
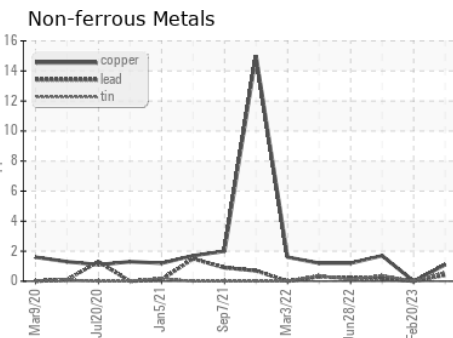
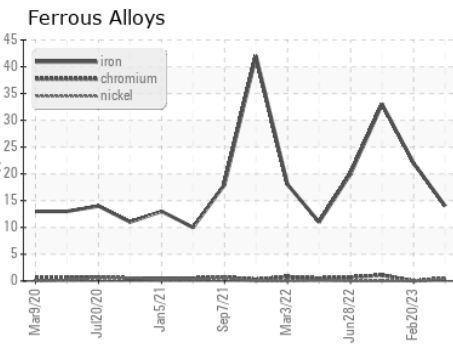
# OIL ANALYSIS REPORT



| PARAMETER        | 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    | NONE     | NONE     |
| Sand/Dirt        | scalar | *Visual    | NONE    | NONE     | NONE     |
| Appearance       | scalar | *Visual    | NORML   | NORML    | NORML    |
| Odor             | scalar | *Visual    | NORML   | NORML    | NORML    |
| Emulsified Water | scalar | *Visual    | >0.2    | NEG      | NEG      |
| Free Water       | scalar | *Visual    |         | NEG      | NEG      |

| FLUID PROPERTIES | method | limit/base | current | history1    | history2 |      |
|------------------|--------|------------|---------|-------------|----------|------|
| Visc @ 100°C     | cSt    | ASTM D445  | 15.4    | <b>13.1</b> | 12.5     | 13.6 |

## GRAPHS



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : GFL0087111 **Received** : 11 Aug 2023  
**Lab Number** : **05921955** **Diagnosed** : 11 Aug 2023  
**Unique Number** : 10601902 **Diagnostician** : Wes Davis  
**Test Package** : FLEET

**GFL Environmental - 001 - Raleigh(CNG)**  
 3741 Conquest Drive  
 Garner, NC  
 US 27529  
 Contact: Craig Johnson  
 craig.johnson@gflenv.com  
 T: (919)662-7100  
 F: (919)662-7130

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)