



# OIL ANALYSIS REPORT

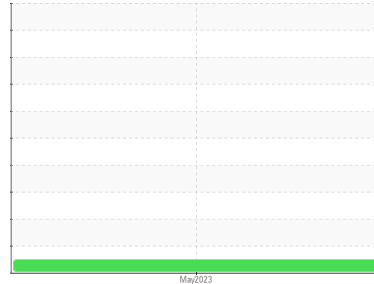
Sample Rating Trend

**NORMAL**



Area  
**KDAC**  
Machine Id  
**200253**  
Component  
**Diesel Engine**  
Fluid

**PETRO CANADA DURON SHP 10W30 (--- GAL)**



## DIAGNOSIS

### Recommendation

Resample at the next service interval to monitor.

### Wear

Metal levels are typical for a new component breaking in.

### Contamination

Elevated aluminum (Al) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. 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>WC0814922</b>   | ---      | ---      |
| Sample Date   | Client Info |             | <b>25 May 2023</b> | ---      | ---      |
| Machine Age   | kms         | Client Info | <b>111338</b>      | ---      | ---      |
| Oil Age       | kms         | Client Info | <b>47508</b>       | ---      | ---      |
| Oil Changed   | Client Info |             | <b>Changed</b>     | ---      | ---      |
| Sample Status |             |             | <b>NORMAL</b>      | ---      | ---      |

## CONTAMINATION

|        | method    | limit/base | current        | history1 | history2 |
|--------|-----------|------------|----------------|----------|----------|
| Fuel   | WC Method | >3.0       | <b>&lt;1.0</b> | ---      | ---      |
| Glycol | WC Method |            | <b>NEG</b>     | ---      | ---      |

## WEAR METALS

|           | method | limit/base    | current | history1     | history2 |
|-----------|--------|---------------|---------|--------------|----------|
| Iron      | ppm    | ASTM D5185(m) | >90     | <b>27</b>    | ---      |
| Chromium  | ppm    | ASTM D5185(m) | >20     | <b>2</b>     | ---      |
| Nickel    | ppm    | ASTM D5185(m) | >2      | <b>&lt;1</b> | ---      |
| Titanium  | ppm    | ASTM D5185(m) | >2      | <b>&lt;1</b> | ---      |
| Silver    | ppm    | ASTM D5185(m) | >2      | <b>&lt;1</b> | ---      |
| Aluminum  | ppm    | ASTM D5185(m) | >20     | <b>25</b>    | ---      |
| Lead      | ppm    | ASTM D5185(m) | >40     | <b>2</b>     | ---      |
| Copper    | ppm    | ASTM D5185(m) | >330    | <b>4</b>     | ---      |
| Tin       | ppm    | ASTM D5185(m) | >15     | <b>1</b>     | ---      |
| Antimony  | ppm    | ASTM D5185(m) |         | <b>0</b>     | ---      |
| Vanadium  | ppm    | ASTM D5185(m) |         | <b>0</b>     | ---      |
| Beryllium | ppm    | ASTM D5185(m) |         | <b>0</b>     | ---      |
| Cadmium   | ppm    | ASTM D5185(m) |         | <b>0</b>     | ---      |

## ADDITIVES

|            | method | limit/base    | current | history1     | history2 |
|------------|--------|---------------|---------|--------------|----------|
| Boron      | ppm    | ASTM D5185(m) | 2       | <b>8</b>     | ---      |
| Barium     | ppm    | ASTM D5185(m) | 0       | <b>0</b>     | ---      |
| Molybdenum | ppm    | ASTM D5185(m) | 50      | <b>60</b>    | ---      |
| Manganese  | ppm    | ASTM D5185(m) | 0       | <b>1</b>     | ---      |
| Magnesium  | ppm    | ASTM D5185(m) | 950     | <b>912</b>   | ---      |
| Calcium    | ppm    | ASTM D5185(m) | 1050    | <b>1172</b>  | ---      |
| Phosphorus | ppm    | ASTM D5185(m) | 995     | <b>1048</b>  | ---      |
| Zinc       | ppm    | ASTM D5185(m) | 1180    | <b>1179</b>  | ---      |
| Sulfur     | ppm    | ASTM D5185(m) | 2600    | <b>2461</b>  | ---      |
| Lithium    | ppm    | ASTM D5185(m) |         | <b>&lt;1</b> | ---      |

## CONTAMINANTS

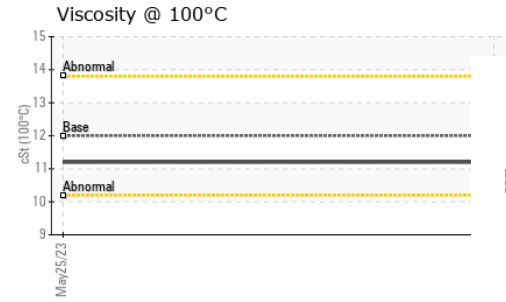
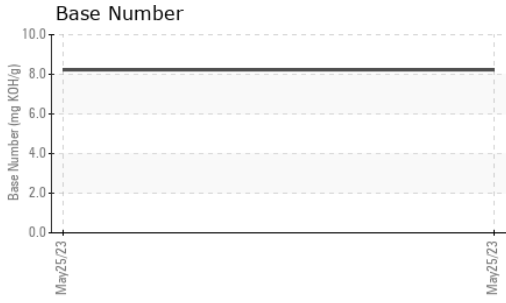
|           | method | limit/base    | current | history1  | history2 |
|-----------|--------|---------------|---------|-----------|----------|
| Silicon   | ppm    | ASTM D5185(m) | >25     | <b>9</b>  | ---      |
| Sodium    | ppm    | ASTM D5185(m) |         | <b>2</b>  | ---      |
| Potassium | ppm    | ASTM D5185(m) | >20     | <b>51</b> | ---      |

## INFRA-RED

|           | method   | limit/base  | current | history1    | history2 |
|-----------|----------|-------------|---------|-------------|----------|
| Soot %    | %        | ASTM D7844* | >6      | <b>0.2</b>  | ---      |
| Nitration | Abs/cm   | ASTM D7624* | >20     | <b>8.3</b>  | ---      |
| Sulfation | Abs./1mm | ASTM D7415* | >30     | <b>19.8</b> | ---      |



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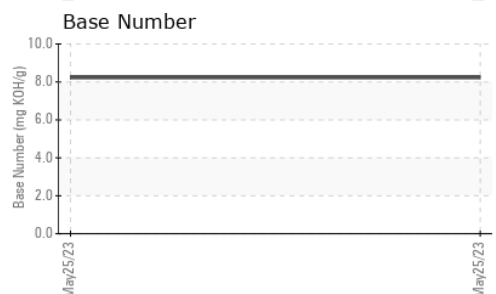
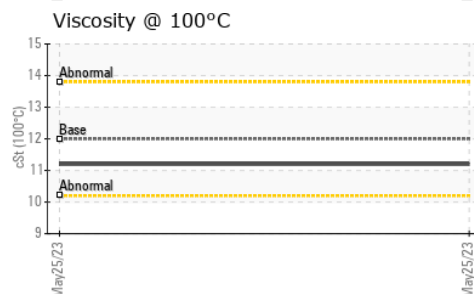
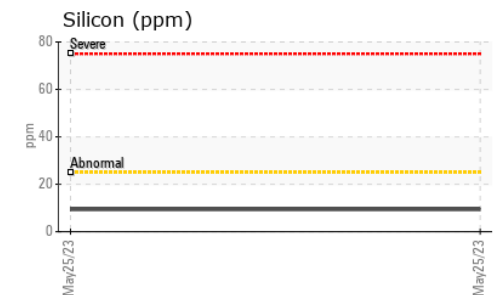
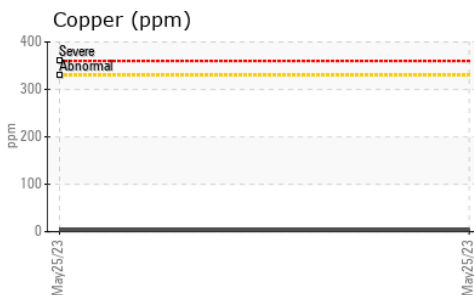
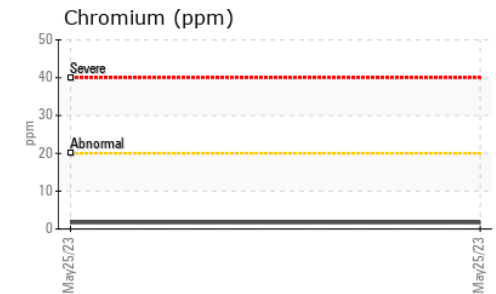
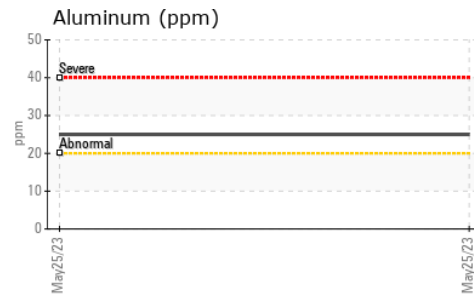
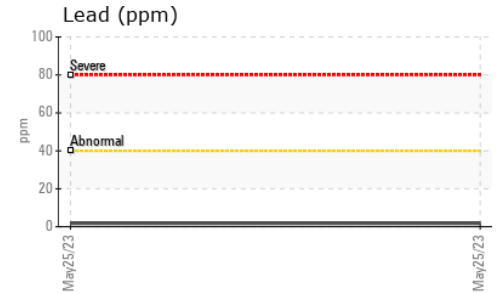
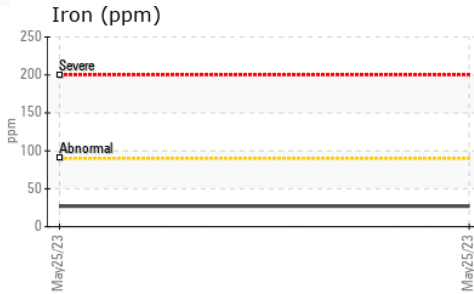


| FLUID DEGRADATION |          | method      | limit/base | current     | history1 | history2 |
|-------------------|----------|-------------|------------|-------------|----------|----------|
| Oxidation         | Abs/.1mm | ASTM D7414* | >25        | <b>15.8</b> | ---      | ---      |
| Base Number (BN)  | mg KOH/g | ASTM D2896* |            | <b>8.23</b> | ---      | ---      |

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

| FLUID PROPERTIES |     | method        | limit/base | current     | history1 | history2 |
|------------------|-----|---------------|------------|-------------|----------|----------|
| Visc @ 100°C     | cSt | ASTM D7279(m) | 12.00      | <b>11.2</b> | ---      | ---      |

## GRAPHS



**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
**Sample No.** : WC0814922 **Received** : 25 May 2023  
**Lab Number** : 02559360 **Diagnosed** : 26 May 2023  
**Unique Number** : 5580400 **Diagnostician** : Wes Davis  
**Test Package** : MOB 2

**WFR Technical Services**  
 5389 Riverside Drive  
 Burlington, ON  
 CA L7L 3Y1  
 Contact: William Ridley  
 wfr.technical.services@gmail.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.

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F: