

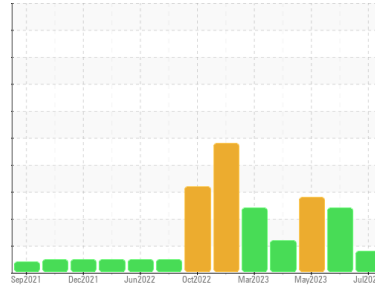


# OIL ANALYSIS REPORT



Area  
**Off-Road**  
Machine Id  
**L209**  
Component  
**Diesel Engine**  
Fluid  
**PETRO CANADA DURON SHP 15W40 (--- GAL)**

Sample Rating Trend



**FUEL**



## DIAGNOSIS

### Recommendation

No corrective action is recommended at this time. Resample at the next service interval to monitor.

### Wear

All component wear rates are normal.

### Contamination

Light fuel dilution occurring. No other contaminants were detected 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>PCA0090489</b>  | PCA0090799  | PCA0090820  |
| Sample Date   | Client Info | <b>19 Jul 2023</b> | 12 Jul 2023 | 31 May 2023 |
| Machine Age   | hrs         | <b>5405</b>        | 5405        | 5405        |
| Oil Age       | hrs         | <b>5405</b>        | 5405        | 5405        |
| Oil Changed   | Client Info | <b>N/A</b>         | N/A         | N/A         |
| Sample Status |             | <b>MARGINAL</b>    | SEVERE      | SEVERE      |

## CONTAMINATION

| method | limit/base | current    | history1 | history2 |
|--------|------------|------------|----------|----------|
| Glycol | WC Method  | <b>NEG</b> | NEG      | NEG      |

## WEAR METALS

| method   | limit/base | current          | history1     | history2 |    |
|----------|------------|------------------|--------------|----------|----|
| Iron     | ppm        | ASTM D5185m >100 | <b>8</b>     | 12       | 16 |
| Chromium | ppm        | ASTM D5185m >20  | <b>&lt;1</b> | <1       | 1  |
| Nickel   | ppm        | ASTM D5185m >2   | <b>&lt;1</b> | <1       | 0  |
| Titanium | ppm        | ASTM D5185m >2   | <b>&lt;1</b> | <1       | <1 |
| Silver   | ppm        | ASTM D5185m >2   | <b>0</b>     | 0        | 0  |
| Aluminum | ppm        | ASTM D5185m >25  | <b>6</b>     | 16       | 12 |
| Lead     | ppm        | ASTM D5185m >40  | <b>&lt;1</b> | <1       | 0  |
| Copper   | ppm        | ASTM D5185m >330 | <b>&lt;1</b> | <1       | 1  |
| Tin      | ppm        | ASTM D5185m >15  | <b>&lt;1</b> | <1       | <1 |
| Vanadium | ppm        | ASTM D5185m      | <b>0</b>     | <1       | 0  |
| Cadmium  | ppm        | ASTM D5185m      | <b>0</b>     | 0        | 0  |

## ADDITIVES

| method     | limit/base | current          | history1     | history2 |      |
|------------|------------|------------------|--------------|----------|------|
| Boron      | ppm        | ASTM D5185m 0    | <b>3</b>     | 2        | 3    |
| Barium     | ppm        | ASTM D5185m 0    | <b>2</b>     | 2        | 0    |
| Molybdenum | ppm        | ASTM D5185m 60   | <b>60</b>    | 55       | 51   |
| Manganese  | ppm        | ASTM D5185m 0    | <b>&lt;1</b> | <1       | <1   |
| Magnesium  | ppm        | ASTM D5185m 1010 | <b>904</b>   | 828      | 806  |
| Calcium    | ppm        | ASTM D5185m 1070 | <b>1055</b>  | 969      | 945  |
| Phosphorus | ppm        | ASTM D5185m 1150 | <b>1019</b>  | 910      | 838  |
| Zinc       | ppm        | ASTM D5185m 1270 | <b>1170</b>  | 1119     | 1034 |
| Sulfur     | ppm        | ASTM D5185m 2060 | <b>3080</b>  | 3140     | 2997 |

## CONTAMINANTS

| method    | limit/base | current         | history1     | history2 |        |
|-----------|------------|-----------------|--------------|----------|--------|
| Silicon   | ppm        | ASTM D5185m >25 | <b>8</b>     | 12       | 15     |
| Sodium    | ppm        | ASTM D5185m     | <b>0</b>     | 2        | 2      |
| Potassium | ppm        | ASTM D5185m >20 | <b>1</b>     | 2        | 0      |
| Fuel      | %          | ASTM D3524 >5   | <b>▲ 3.9</b> | ● 9.4    | ● 13.3 |

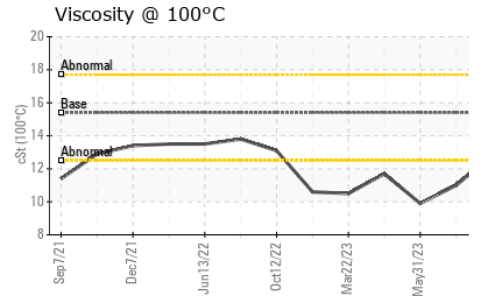
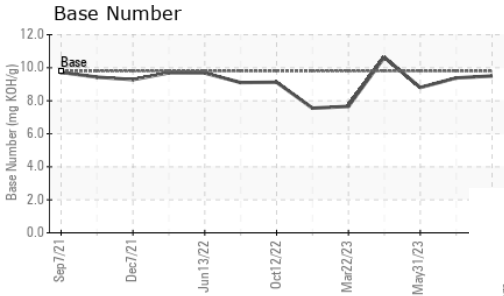
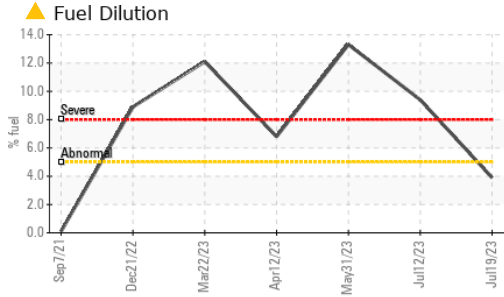
## INFRA-RED

| method    | limit/base | current         | history1    | history2 |      |
|-----------|------------|-----------------|-------------|----------|------|
| Soot %    | %          | *ASTM D7844 >3  | <b>0.3</b>  | 0.6      | 0.8  |
| Nitration | Abs/cm     | *ASTM D7624 >20 | <b>5.5</b>  | 7.9      | 9.0  |
| Sulfation | Abs/.1mm   | *ASTM D7415 >30 | <b>17.2</b> | 18.4     | 18.8 |

## FLUID DEGRADATION

| method           | limit/base | current         | history1    | history2 |      |
|------------------|------------|-----------------|-------------|----------|------|
| Oxidation        | Abs/.1mm   | *ASTM D7414 >25 | <b>12.8</b> | 13.7     | 14.7 |
| Base Number (BN) | mg KOH/g   | ASTM D2896 9.8  | <b>9.50</b> | 9.38     | 8.80 |

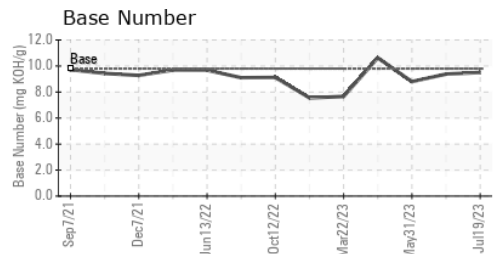
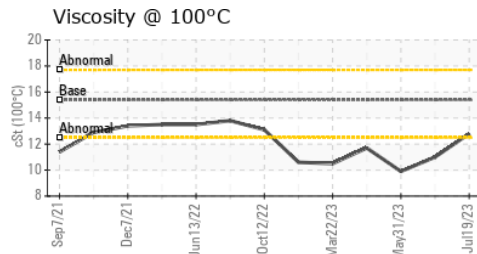
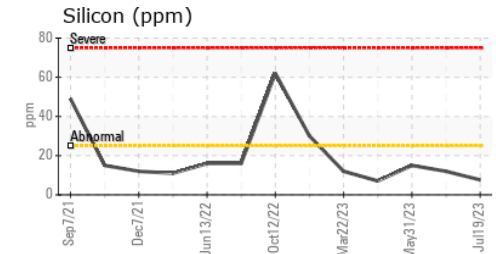
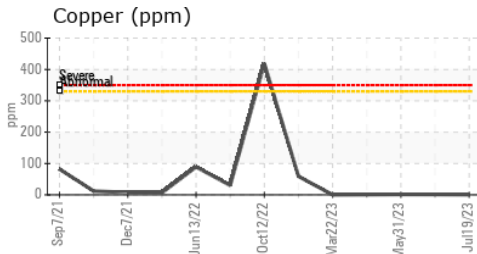
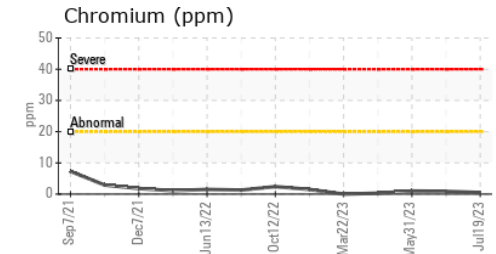
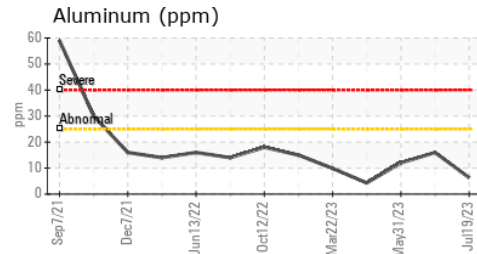
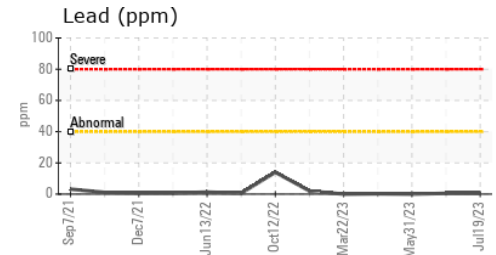
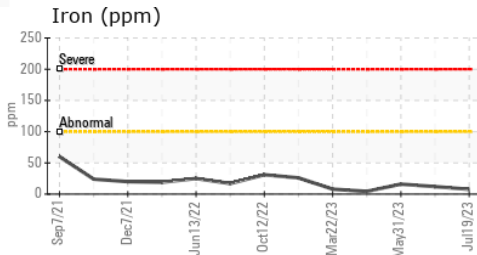
# OIL ANALYSIS REPORT



| 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    | 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    | 12.8     | ▲ 11.0    ● 9.9 |

## GRAPHS



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : PCA0090489 **Received** : 21 Jul 2023  
**Lab Number** : 05904519 **Diagnosed** : 24 Jul 2023  
**Unique Number** : 10565875 **Diagnostician** : Wes Davis  
**Test Package** : MOB 2 ( Additional Tests: PercentFuel )

**WIN Waste Innovations - Shop # - Taunton**  
 565 WINTHROP ST  
 TAUNTON, MA  
 US 02780  
 Contact: Dave Wilson  
 dwilson@win-waste.com

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)

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F: