



# OIL ANALYSIS REPORT

|                 |        |
|-----------------|--------|
| WEAR            | NORMAL |
| CONTAMINATION   | NORMAL |
| FLUID CONDITION | NORMAL |

Machine Id  
**8776**  
 Component  
**Diesel Engine**  
 Fluid  
**PETRO CANADA DURON SHP 15W40 (--- GAL)**

## RECOMMENDATION

Resample at the next service interval to monitor. Please specify the component make and model with your next sample.

| Test           | UOM | Method      | Limit/Abn | Current     | History1    | History2    |
|----------------|-----|-------------|-----------|-------------|-------------|-------------|
| Sample Number  |     | Client Info |           | NL0002038   | NL0001887   | NL0001788   |
| Sample Date    |     | Client Info |           | 25 Apr 2024 | 22 Feb 2024 | 05 Dec 2023 |
| Machine Age    | mls | Client Info |           | 155398      | 117453      | 77656       |
| Oil Age        | mls | Client Info |           | 45000       | 45000       | 45000       |
| Filter Age     | mls | Client Info |           | 45000       | 45000       | 45000       |
| Oil Changed    |     | Client Info |           | Changed     | Changed     | Changed     |
| Filter Changed |     | Client Info |           | Changed     | Changed     | Changed     |
| Sample Status  |     |             |           | NORMAL      | NORMAL      | NORMAL      |

## WEAR

All component wear rates are normal.

|              |        |             |      |      |      |      |
|--------------|--------|-------------|------|------|------|------|
| Iron         | ppm    | ASTM D5185m | >100 | 39   | 22   | 24   |
| Chromium     | ppm    | ASTM D5185m | >20  | 1    | <1   | <1   |
| Nickel       | ppm    | ASTM D5185m | >4   | 2    | <1   | <1   |
| Titanium     | ppm    | ASTM D5185m |      | <1   | 0    | <1   |
| Silver       | ppm    | ASTM D5185m | >3   | <1   | 0    | 0    |
| Aluminum     | ppm    | ASTM D5185m | >20  | 7    | 4    | 6    |
| Lead         | ppm    | ASTM D5185m | >40  | 1    | 0    | 0    |
| Copper       | ppm    | ASTM D5185m | >330 | 60   | 50   | 94   |
| Tin          | ppm    | ASTM D5185m | >15  | 3    | 2    | 3    |
| Vanadium     | ppm    | ASTM D5185m |      | <1   | 0    | 0    |
| White Metal  | scalar | *Visual     | NONE | NONE | NONE | NONE |
| Yellow Metal | scalar | *Visual     | NONE | NONE | NONE | NONE |

## CONTAMINATION

There is no indication of any contamination in the oil.

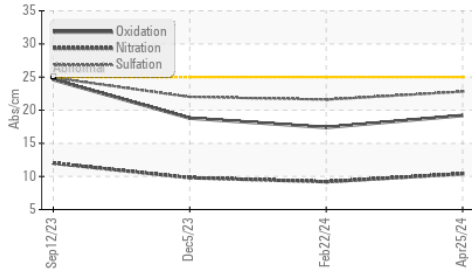
|                  |          |             |       |       |       |       |
|------------------|----------|-------------|-------|-------|-------|-------|
| Silicon          | ppm      | ASTM D5185m | >25   | 9     | 6     | 10    |
| Potassium        | ppm      | ASTM D5185m | >20   | 13    | 4     | 16    |
| Fuel             |          | WC Method   | >5    | <1.0  | <1.0  | <1.0  |
| Water            |          | WC Method   | >0.2  | NEG   | NEG   | NEG   |
| Glycol           |          | WC Method   |       | NEG   | NEG   | NEG   |
| Soot %           | %        | *ASTM D7844 | >3    | 0.8   | 0.6   | 0.6   |
| Nitration        | Abs/cm   | *ASTM D7624 | >20   | 10.4  | 9.2   | 9.8   |
| Sulfation        | Abs/.1mm | *ASTM D7415 | >30   | 22.8  | 21.6  | 22.0  |
| Silt             | scalar   | *Visual     | NONE  | NONE  | NONE  | NONE  |
| Debris           | scalar   | *Visual     | NONE  | NONE  | NONE  | NONE  |
| Sand/Dirt        | scalar   | *Visual     | NONE  | NONE  | NONE  | NONE  |
| Appearance       | scalar   | *Visual     | NORML | NORML | NORML | NORML |
| Odor             | scalar   | *Visual     | NORML | NORML | NORML | NORML |
| Emulsified Water | scalar   | *Visual     | >0.2  | NEG   | NEG   | NEG   |

## FLUID CONDITION

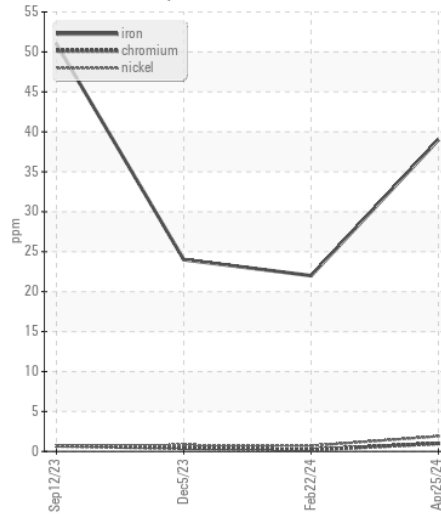
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

|                  |          |             |      |      |      |      |
|------------------|----------|-------------|------|------|------|------|
| Sodium           | ppm      | ASTM D5185m |      | <1   | 2    | 0    |
| Boron            | ppm      | ASTM D5185m | 0    | 16   | 19   | 2    |
| Barium           | ppm      | ASTM D5185m | 0    | 1    | 0    | <1   |
| Molybdenum       | ppm      | ASTM D5185m | 60   | 71   | 67   | 70   |
| Manganese        | ppm      | ASTM D5185m | 0    | 1    | 1    | <1   |
| Magnesium        | ppm      | ASTM D5185m | 1010 | 876  | 901  | 878  |
| Calcium          | ppm      | ASTM D5185m | 1070 | 1215 | 1159 | 1105 |
| Phosphorus       | ppm      | ASTM D5185m | 1150 | 975  | 984  | 865  |
| Zinc             | ppm      | ASTM D5185m | 1270 | 1252 | 1272 | 1106 |
| Sulfur           | ppm      | ASTM D5185m | 2060 | 2446 | 2949 | 2219 |
| Oxidation        | Abs/.1mm | *ASTM D7414 | >25  | 19.2 | 17.4 | 18.8 |
| Base Number (BN) | mg KOH/g | ASTM D2896  | 9.8  | 5.5  | 6.5  | 6.1  |
| Visc @ 100°C     | cSt      | ASTM D445   | 15.4 | 13.2 | 13.5 | 12.9 |

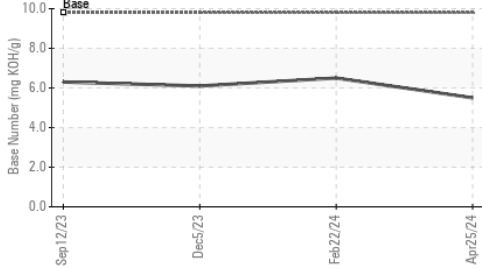
**FT-IR (Direct Trend)**



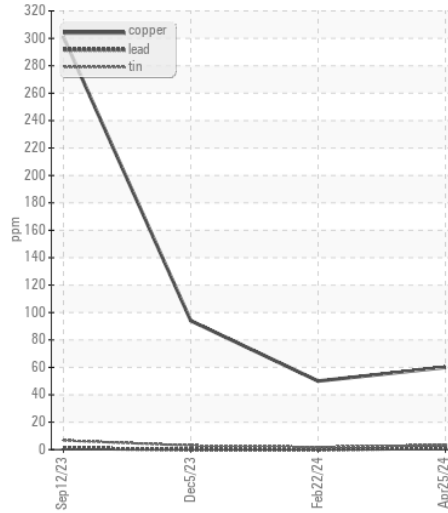
**Ferrous Alloys**



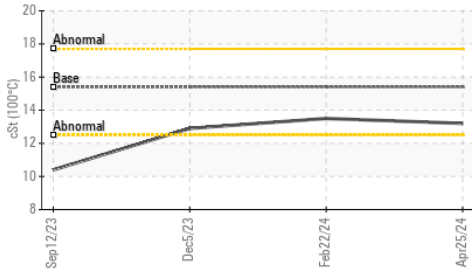
**Base Number**



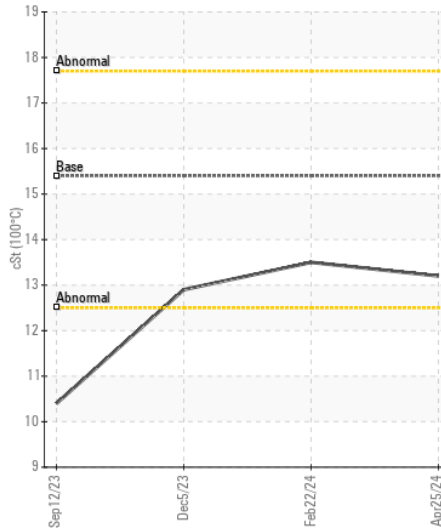
**Non-ferrous Metals**



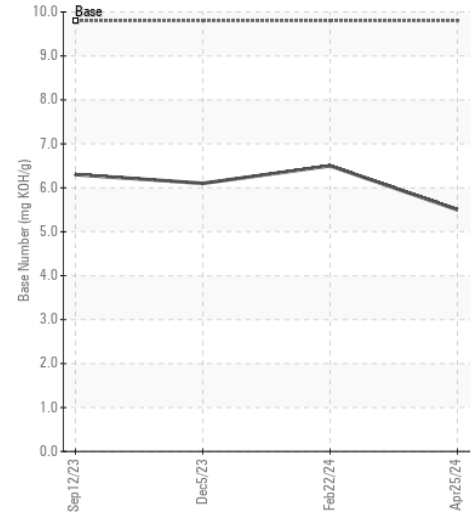
**Viscosity @ 100°C**



**Viscosity @ 100°C**



**Base Number**



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : NL0002038  
**Lab Number** : 06217839  
**Unique Number** : 11096036  
**Test Package** : FLEET

**Received** : 24 Jun 2024  
**Tested** : 25 Jun 2024  
**Diagnosed** : 25 Jun 2024 - Wes Davis

**FOX & JAMES NATIONALEASE - Manassas**  
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 US 20109  
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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)