

## **OIL ANALYSIS REPORT**

#### Area (51469Z) Walgreens - Tractor Machine Id [Walgreens - Tractor] 136B63312

**Diesel Engine** 

PETRO CANADA DURON SHP 10W30 (11 GAL)

### DIAGNOSIS

#### Recommendation

Oil and filter change at the time of sampling has been noted. No corrective action is recommended at this time. Resample at the next service interval to monitor.

#### Wear

All component wear rates are normal.

#### Contamination

Elevated aluminum (AI) 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. No other contaminants were detected in the oil.

#### Fluid Condition

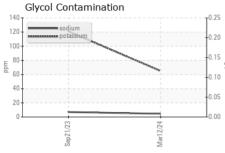
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

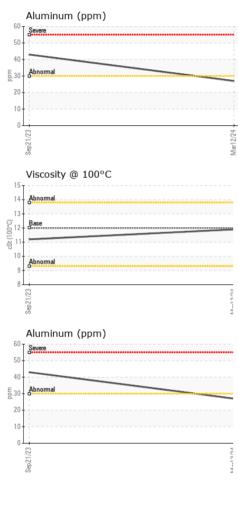
| 63312                    |          |             |            |             |              |          |  |
|--------------------------|----------|-------------|------------|-------------|--------------|----------|--|
| AL)                      |          |             | Sep2023    | Mar2024     |              |          |  |
| SAMPLE INFOR             | MATION   | method      | limit/base | current     | history1     | history2 |  |
| Sample Number            |          | Client Info |            | PCA0106561  | PCA0106537   |          |  |
| Sample Date              |          | Client Info |            | 12 Mar 2024 | 21 Sep 2023  |          |  |
| Machine Age              | mls      | Client Info |            | 153314      | 75281        |          |  |
| Oil Age                  | mls      | Client Info |            | 73000       | 0            |          |  |
| Oil Changed              |          | Client Info |            | Changed     | Changed      |          |  |
| Sample Status            |          |             |            | NORMAL      | ABNORMAL     |          |  |
| CONTAMINAT               | ION      | method      | limit/base | current     | history1     | history2 |  |
| Fuel                     |          | WC Method   | >5         | <1.0        | <1.0         |          |  |
| Water                    |          | WC Method   | >0.2       | NEG         | NEG          |          |  |
| Glycol                   |          | WC Method   |            | NEG         | NEG          |          |  |
| WEAR METAL               | S        | method      | limit/base | current     | history1     | history2 |  |
| ron                      | ppm      | ASTM D5185m | >80        | 48          | 65           |          |  |
| Chromium                 | ppm      | ASTM D5185m | >5         | 4           | 5            |          |  |
| Nickel                   | ppm      | ASTM D5185m | >2         | <1          | <1           |          |  |
| Titanium                 | ppm      | ASTM D5185m |            | <1          | <1           |          |  |
| Silver                   | ppm      | ASTM D5185m | >3         | 0           | 0            |          |  |
| Aluminum                 | ppm      | ASTM D5185m | >30        | 27          | 43           |          |  |
| _ead                     | ppm      | ASTM D5185m | >30        | <1          | 0            |          |  |
| Copper                   | ppm      | ASTM D5185m | >150       | 115         | <b>A</b> 219 |          |  |
| Tin                      | ppm      | ASTM D5185m | >5         | <1          | 3            |          |  |
| Vanadium                 | ppm      | ASTM D5185m |            | <1          | 0            |          |  |
| Cadmium                  | ppm      | ASTM D5185m |            | 0           | 0            |          |  |
| ADDITIVES                |          | method      | limit/base | current     | history1     | history2 |  |
| Boron                    | ppm      | ASTM D5185m | 2          | 12          | 26           |          |  |
| Barium                   | ppm      | ASTM D5185m | 0          | 0           | 0            |          |  |
| Molybdenum               | ppm      | ASTM D5185m | 50         | 54          | 42           |          |  |
| Vanganese                | ppm      | ASTM D5185m | 0          | 2           | 4            |          |  |
| Magnesium                | ppm      | ASTM D5185m | 950        | 855         | 638          |          |  |
| Calcium                  | ppm      | ASTM D5185m | 1050       | 1368        | 1929         |          |  |
| Phosphorus               | ppm      | ASTM D5185m | 995        | 915         | 762          |          |  |
| Zinc                     | ppm      | ASTM D5185m | 1180       | 1128        | 956          |          |  |
| Sulfur                   | ppm      | ASTM D5185m | 2600       | 2321        | 2016         |          |  |
| CONTAMINAN               | NTS      | method      | limit/base | current     | history1     | history2 |  |
| Silicon                  | ppm      | ASTM D5185m | >20        | 10          | 9            |          |  |
| Sodium                   | ppm      | ASTM D5185m |            | 4           | 7            |          |  |
| Potassium                | ppm      | ASTM D5185m | >20        | 65          | 121          |          |  |
| INFRA-RED                |          | method      | limit/base | current     | history1     | history2 |  |
| Soot %                   | %        | *ASTM D7844 | >3         | 0.8         | 0.8          |          |  |
| Nitration                | Abs/cm   | *ASTM D7624 | >20        | 11.9        | 14.0         |          |  |
|                          |          | *ACTM D741E | > 20       | 23.9        | 24.6         |          |  |
| Sulfation                | Abs/.1mm | *ASTM D7415 | >30        | 23.5        | 24.0         |          |  |
| Sulfation<br>FLUID DEGRA |          |             | limit/base | current     | history1     | history2 |  |
|                          |          |             | limit/base |             |              | history2 |  |

Sample Rating Trend

NORMAL







# **OIL ANALYSIS REPORT**

|  | т0.25   | VISUAL  |                    | method   | limit/base  | current     | history1   | history2                  |  |  |
|--|---|---|--------------------|--|---|-------------|------------|---------------------------|--|--|
|  | -0.20   | White Metal   | scalar             | *Visual  | NONE  | NONE        | NONE       |                           |  |  |
|  |   | Yellow Metal  | scalar             | *Visual  | NONE  | NONE        | NONE       |                           |  |  |
| South Care and a state of the s | -0.15 egy<br>-0.10  | Precipitate   | scalar             | *Visual  | NONE  | NONE        | NONE       |                           |  |  |
|  | -0.10 8   | Silt  | scalar             | *Visual  | NONE  | NONE        | NONE       |                           |  |  |
|  | -0.05   | Debris  | scalar             | *Visual  | NONE  | NONE        | NONE       |                           |  |  |
|  | 0.00  | Sand/Dirt   | scalar             | *Visual  | NONE  | NONE        | NONE       |                           |  |  |
| 2/24   | -0.00   | Appearance  | scalar             | *Visual  | NORML   | NORML       | NORML      |                           |  |  |
| Mar12/24   |   | Odor  | scalar             | *Visual  | NORML   | NORML       | NORML      |                           |  |  |
|  |   | Emulsified Water                                      | scalar             | *Visual  | >0.2  | NEG         | NEG        |                           |  |  |
|  |   | Free Water  | scalar             | *Visual  |   | NEG         | NEG        |                           |  |  |
|  |   | FLUID PROPE   |                    | method   | limit/base  | current     | history1   | history2                  |  |  |
|  |   | Visc @ 100°C  | cSt                | ASTM D445  |   | 11.9        | 11.2       |                           |  |  |
|  |   | GRAPHS  |                    |  |   |             |            |                           |  |  |
|  |   | Ferrous Alloys  |                    |  |   |             |            |                           |  |  |
|  | 24  | for iron  |                    |  |   |             |            |                           |  |  |
|  | Mar12/24  | 50  |                    |  |   |             |            |                           |  |  |
|  |   |   |                    |  |   |             |            |                           |  |  |
|  |   | 법<br>30 -   |                    |  |   |             |            |                           |  |  |
|  |   | 20  |                    |  |   |             |            |                           |  |  |
|  |   | 10  |                    |  |   |             |            |                           |  |  |
|  |   |   |                    |  |   |             |            |                           |  |  |
|  |   | Sep21/23  |                    |  | Mar12/24 -  |             |            |                           |  |  |
|  |   | Sep 2   |                    |  | Marl  |             |            |                           |  |  |
|  |   | Non-ferrous Meta                                      | ls                 |  |   |             |            |                           |  |  |
|  | C C   | 250 copper  |                    |  |   |             |            |                           |  |  |
|  | . F. U.   | 200 - tin   |                    |  |   |             |            |                           |  |  |
|  |   | 150   |                    |  |   |             |            |                           |  |  |
|  |   | E   |                    |  |   |             |            |                           |  |  |
|  |   | 100-  |                    |  |   |             |            |                           |  |  |
|  |   | 50 -  |                    |  |   |             |            |                           |  |  |
|  |   | 50-   |                    |  |   |             |            |                           |  |  |
|  |   | 0<br>چ  |                    | -  | 24  |             |            |                           |  |  |
|  |   | ep21/23   |                    |  | lar12/24  |             |            |                           |  |  |
|  | КС,   | »<br>Viscosity @ 100°                                 | _                  |  | $\geq$  |             |            |                           |  |  |
|  | C114  | <sup>15</sup> T                                       |                    |  | 5.0   | Base Number |            |                           |  |  |
|  |   | 14 - Abnormal   |                    |  | 3.0   |             |            |                           |  |  |
|  |   | 13  |                    |  | € <sup>4.0</sup>  |             |            |                           |  |  |
|  |   |   |                    |  | N N N   |             |            |                           |  |  |
|  |   | 30 12 - Base  |                    |  | (B)HOX<br>HOX<br>Buy<br>tag<br>unun<br>ese<br>1.0.<br>Buy<br>tag<br>tag<br>tag<br>tag<br>tag<br>tag<br>tag<br>tag<br>tag<br>tag |             |            |                           |  |  |
|  |   |   |                    |  | FN 2.0-   |             |            |                           |  |  |
|  |   | Abnormal  |                    |  | en 1.0-   |             |            |                           |  |  |
|  |   | 9-  |                    |  | 1.0   |             |            |                           |  |  |
|  |   |   |                    |  | -0.0  | 23          |            |                           |  |  |
|  |   | Sep21/23  |                    |  | Mar12/24  | Sep 21/23   |            |                           |  |  |
|  |   | ~   |                    |  | 2   | 0           |            |                           |  |  |
|  |   | : WearCheck USA - 50                                  | e - Shop 1369 - Be | <mark>rkeley-Waxahach</mark> i<br>'10 Ovilla Roa |   |             |            |                           |  |  |
| 4  | Laboratory  |   |                    |  |   |             |            |                           |  |  |
| NAB  | Sample No.  | : PCA0106561  | Recei<br>Teste     |  |   |             |            |                           |  |  |
|  | Sample No.<br>Lab Number<br>Unique Number                 | : PCA0106561<br>: <mark>06122975</mark><br>: 10937126 |                    | d : 20   |   | Baldridge   |            | Vaxahachie, TX<br>US 7516 |  |  |
| TREDITION  | Sample No.<br>Lab Number<br>Unique Number<br>Test Package | : PCA0106561<br>: <mark>06122975</mark><br>: 10937126 | Teste<br>Diagn     | d : 20<br>osed : 21                              | ) Mar 2024<br>Mar 2024 - Don  | Baldridge   | V<br>Conta | /axahachie, T             |  |  |

£

Contact/Location: Robert Beal - TSV1369