

OIL ANALYSIS REPORT

Sample Rating Trend





Component

Diesel Engine

PETRO CANADA DURON SHP 10W30 (--- QTS)

DIAGNOSIS

Recommendation

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

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

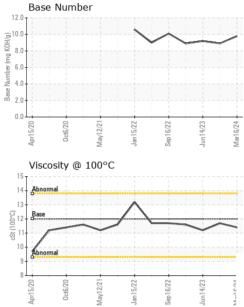
Fluid Condition

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

| (TS) | | Apr2020 | Dct2020 May2021 | Jan2022 Sep2022 Jun2023 | Mar2024 | |
|----------------------------------|--------------------|---|--------------------------------|-------------------------|------------------|---------------------|
| SAMPLE INFOR | MATION | method | limit/base | current | history1 | history2 |
| Sample Number | | Client Info | | PCA0120631 | PCA0106298 | PCA0098066 |
| Sample Date | | Client Info | | 16 Mar 2024 | 09 Oct 2023 | 14 Jun 2023 |
| Machine Age | mls | Client Info | | 0 | 92249 | 85501 |
| Oil Age | mls | Client Info | | 0 | 0 | 0 |
| Oil Changed | | Client Info | | N/A | Changed | Changed |
| Sample Status | | | | NORMAL | NORMAL | NORMAL |
| CONTAMINAT | ION | method | limit/base | current | history1 | history2 |
| Fuel | | WC Method | >5 | <1.0 | <1.0 | <1.0 |
| Water | | WC Method | >0.2 | NEG | NEG | NEG |
| Glycol | | WC Method | | NEG | NEG | NEG |
| WEAR METAL | S | method | limit/base | current | history1 | history2 |
| Iron | ppm | ASTM D5185m | >100 | 23 | 13 | 19 |
| Chromium | ppm | ASTM D5185m | >20 | <1 | <1 | <1 |
| Nickel | ppm | ASTM D5185m | >4 | 0 | <1 | 0 |
| Titanium | ppm | ASTM D5185m | | 0 | 0 | 0 |
| Silver | ppm | ASTM D5185m | >3 | 0 | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >20 | 3 | 2 | <1 |
| Lead | ppm | ASTM D5185m | >40 | 1 | <1 | 0 |
| Copper | ppm | ASTM D5185m | >330 | 2 | 2 | 1 |
| Tin | ppm | ASTM D5185m | >15 | <1 | <1 | <1 |
| Vanadium | ppm | ASTM D5185m | | <1 | <1 | 0 |
| Cadmium | ppm | ASTM D5185m | | 0 | 0 | 0 |
| ADDITIVES | | method | limit/base | current | history1 | history2 |
| Boron | ppm | ASTM D5185m | 2 | 2 | 0 | 8 |
| Barium | ppm | ASTM D5185m | 0 | 0 | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | 50 | 66 | 64 | 66 |
| Manganese | ppm | ASTM D5185m | 0 | <1 | <1 | <1 |
| Magnesium | ppm | ASTM D5185m | 950 | 1012 | 1085 | 957 |
| Calcium | ppm | ASTM D5185m | 1050 | 1184 | 1171 | 1164 |
| Phosphorus | ppm | ASTM D5185m | 995 | 1071 | 1228 | 1024 |
| Zinc | ppm | ASTM D5185m | 1180 | 1264 | 1514 | 1246 |
| Sulfur | ppm | ASTM D5185m | 2600 | 3717 | 3674 | 3632 |
| CONTAMINAN | ITS | method | limit/base | current | history1 | history2 |
| Silicon | ppm | ASTM D5185m | >25 | 6 | 4 | 4 |
| Sodium | ppm | ASTM D5185m | | 2 | 0 | 1 |
| Potassium | ppm | ASTM D5185m | >20 | <1 | <1 | <1 |
| | | | | | history1 | history2 |
| INFRA-RED | | method | limit/base | current | nistory i | TIIStOLYZ |
| | % | method *ASTM D7844 | limit/base | current | 1 | 0.9 |
| Soot % | % Abs/cm | | | | · · · | |
| Soot % Nitration | | *ASTM D7844 | >3 | 1.1 | 1 | 0.9 |
| Soot % Nitration | Abs/cm Abs/.1mm | *ASTM D7844 *ASTM D7624 *ASTM D7415 | >3 >20 | 1.1 9.5 19.9 | 1 8.8 | 0.9 10.1 |
| Soot % Nitration Sulfation | Abs/cm Abs/.1mm | *ASTM D7844 *ASTM D7624 *ASTM D7415 | >3 >20 >30 limit/base | 1.1 9.5 19.9 | 1 8.8 20.0 | 0.9 10.1 19.8 |



OIL ANALYSIS REPORT



| | | VISUAL | | method | limit/base | current | history1 | history2 | |
|--------------------------|------------------------|---------------------------------|------------------|--|---|-----------------------------|--|------------------------|--|
| $\backslash \land$ | | White Metal | scalar | *Visual | NONE | NONE | NONE | NONE | |
| \sim | | Yellow Metal | scalar | *Visual | NONE | NONE | NONE | NONE | |
| | | Precipitate | scalar | *Visual | NONE | NONE | NONE | NONE | |
| | | Silt | scalar | *Visual | NONE | NONE | NONE | NONE | |
| | | Debris | scalar | *Visual | NONE | NONE | NONE | NONE | |
| | | Sand/Dirt | scalar | *Visual | NONE | NONE | NONE | NONE | |
| 5/22 | 4/23 | Appearance | scalar | *Visual | NORML | NORML | NORML | NORML | |
| Jan 15/22 Sep 16/22 | Jun 14/23 Mar 16/24 | Odor | scalar | *Visual | NORML | NORML | NORML | NORML | |
| | | Emulsified Water | scalar | *Visual | >0.2 | NEG | NEG | NEG | |
| | | Free Water | scalar | *Visual | 20.L | NEG | NEG | NEG | |
| | | FLUID PROPE | | method | limit/base | current | history1 | history2 | |
| \wedge | | Visc @ 100°C | cSt | ASTM D445 | 12.00 | 11.4 | 11.7 | 11.2 | |
| | \sim | GRAPHS | 001 | | 12.00 | | | | |
| | | Iron (ppm) | | | | Lead (ppm) | | | |
| | | 250 - Severa | | | 100 | | | | |
| Jan 15/22 Sep 16/22 | Jun 14/23 | 200 - Severe | | | 80 | Severe | | | |
| Sep | Jun | 150 - 100 - Abnormal | | | 60 Ed 40 | | | | |
| | | all 100 - Abnormal | | | ⁻ 40 | - Abnormal | | | |
| | | 50 | | | 20 | | | | |
| | | 20+02 | 22 | 23+ | 0 | 20 | 22 | 23 | |
| | | Apr15/20 0ct6/20 May12/21 | Jan 15/22 | Sep 16/22 Jun 14/23 | Mar16/24 | Apr15/20 0ct6/20 | May12/21 Jan15/22 | Jun 14/23 Mar 16/24 | |
| | | ⊲ ≥ Aluminum (ppm) | ň | N I | Z | Chromium (pp) Chromium (pp) | | n - ≥ | |
| | | 50 Severa | | | 50 | | , | | |
| | | 40 - 0 | | | 40 | T | | | |
| | | 20 - Abnormal | | | ³⁰ 20 | Abnormal | | | |
| | | | | | | | | | |
| | | 10 | | | 10 | | | | |
| | | 2/20 //20 //20 | 1/22 | 123 | 0 | | (22 - | /23 | |
| | | Apr15/20 0ct6/20 May12/21 | Jan 15/22 | Sep16/22 Jun14/23 | Mar16/24 | Apr15/20 0ct6/20 | May12/21 Jan15/22 | Jun 14/23 Mar 16/24 | |
| | | Copper (ppm) | | | _ | Silicon (ppm) | | | |
| | | 600 T | | | 80 | | | | |
| | | 500 | | | 60 | | | | |
| | | 400 <u>5</u> 300 | | | 튭.40 | | | | |
| | | 200 | | | | Abhormal | | | |
| | | 100 | | | 20 | | | | |
| | | | 5 | 3 2 | 0 | | 2 | - <u>6</u> 4 | |
| | | Apr15/20 0ct6/20 May12/21 | Jan 15/22 | Sep 16/22 Jun 14/23 | Mar16/24 | Apr15/20 0ct6/20 | May12/21 Jan15/22 | Jun 14/23 Mar 16/24 | |
| | | ৰ ঁ Viscosity @ 100°C | | Jun Se | W | | N La | n n Ma | |
| | | ¹⁶ T | | | 12.0 | Base Number | | | |
| | | 14 Abnormal | | | PH0 | | \sim | \sim | |
| | | 0 0 12 Base | \wedge | | B 8.0 | | | | |
| | | Base 12 tg | | | | | | | |
| | | 10 Abnormal | | | (b)(H0,0 8.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9 | | | | |
| | | 8 | | | 0.0 | | | | |
| | | Apr15/20 0ct6/20 May12/21 | Jan 15/22 | Sep16/22 Jun14/23 | Mar16/24 | Apr15/20 0ct6/20 | May12/21 Jan15/22 | Jun 14/23 Mar 16/24 | |
| | | Apr 0(| Jan | Sep | Mar | Api O(| Jan San | Jun Jun | |
| | Laboratory | : WearCheck USA - 50 | 1 Madiso | МІ | MILLER TRUCK LEASING #119 | | | | |
| Sample No. Lab Number | | : PCA0120631 | | eived : 02 Apr 2024 ted : 03 Apr 2024 | | | | DUSTRIAL AVE | |
| | | | Teste | | | | HASBROUCH | K HEIGHTS, N. | |
| TESTING LABORATORY | Unique Number | | : 10955584 Diagr | | | es Davis | | US 07604 | |
| 0 | | : MOB 1 (Additional Te | | | | | Contact: MIKE LONGETTE mlongette@millertransgroup.com | | |
| Certificate L2367 | completer . | , contact Customer Serv | ing -+ + f | nn nn + | า | | | | |



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