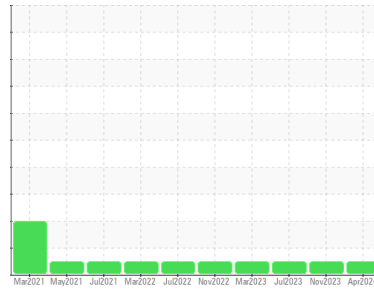


OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Machine Id
2026838
 Component
Diesel Engine
 Fluid
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.

SAMPLE INFORMATION

| | method | limit/base | current | history1 | history2 |
|---------------|-------------|-------------|--------------------|-------------|-------------|
| Sample Number | Client Info | | PCA0111498 | PCA0108066 | PCA0101092 |
| Sample Date | Client Info | | 09 Apr 2024 | 21 Nov 2023 | 25 Jul 2023 |
| Machine Age | mls | Client Info | 436209 | 396173 | 359796 |
| Oil Age | mls | Client Info | 40000 | 36377 | 40000 |
| Oil Changed | | Client Info | N/A | Changed | Changed |
| Sample Status | | | NORMAL | NORMAL | NORMAL |

CONTAMINATION

| | 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 METALS

| | method | limit/base | current | history1 | history2 |
|----------|--------|------------------|--------------|----------|----------|
| Iron | ppm | ASTM D5185m >100 | 42 | 29 | 33 |
| Chromium | ppm | ASTM D5185m >20 | 1 | <1 | <1 |
| Nickel | ppm | ASTM D5185m >4 | 3 | <1 | <1 |
| Titanium | ppm | ASTM D5185m | <1 | <1 | 0 |
| Silver | ppm | ASTM D5185m >3 | <1 | 0 | 0 |
| Aluminum | ppm | ASTM D5185m >20 | 4 | 3 | 4 |
| Lead | ppm | ASTM D5185m >40 | 2 | <1 | <1 |
| Copper | ppm | ASTM D5185m >330 | 9 | 6 | 6 |
| Tin | ppm | ASTM D5185m >15 | 2 | <1 | <1 |
| Vanadium | ppm | ASTM D5185m | <1 | <1 | 0 |
| Cadmium | ppm | ASTM D5185m | <1 | 0 | 0 |

ADDITIVES

| | method | limit/base | current | history1 | history2 |
|------------|--------|------------------|--------------|----------|----------|
| Boron | ppm | ASTM D5185m 2 | <1 | 0 | <1 |
| Barium | ppm | ASTM D5185m 0 | <1 | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m 50 | 61 | 59 | 61 |
| Manganese | ppm | ASTM D5185m 0 | 2 | <1 | <1 |
| Magnesium | ppm | ASTM D5185m 950 | 897 | 986 | 977 |
| Calcium | ppm | ASTM D5185m 1050 | 1071 | 1092 | 1149 |
| Phosphorus | ppm | ASTM D5185m 995 | 1042 | 922 | 1001 |
| Zinc | ppm | ASTM D5185m 1180 | 1204 | 1298 | 1301 |
| Sulfur | ppm | ASTM D5185m 2600 | 3433 | 3024 | 3641 |

CONTAMINANTS

| | method | limit/base | current | history1 | history2 |
|-----------|--------|-----------------|--------------|----------|----------|
| Silicon | ppm | ASTM D5185m >25 | 7 | 4 | 4 |
| Sodium | ppm | ASTM D5185m | <1 | 1 | 2 |
| Potassium | ppm | ASTM D5185m >20 | 6 | 3 | 5 |

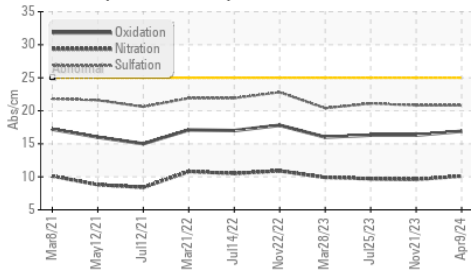
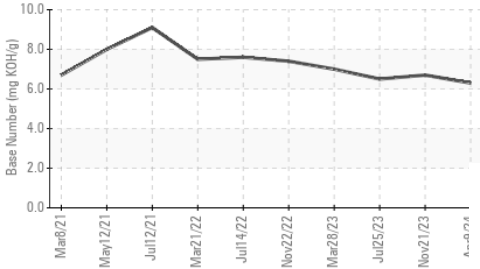
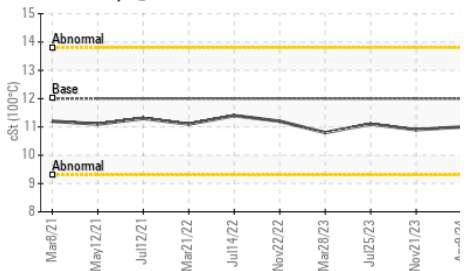
INFRA-RED

| | method | limit/base | current | history1 | history2 |
|-----------|----------|-----------------|-------------|----------|----------|
| Soot % | % | *ASTM D7844 >3 | 0.7 | 0.7 | 0.7 |
| Nitration | Abs/cm | *ASTM D7624 >20 | 10.1 | 9.6 | 9.7 |
| Sulfation | Abs/.1mm | *ASTM D7415 >30 | 20.8 | 20.8 | 21.1 |

FLUID DEGRADATION

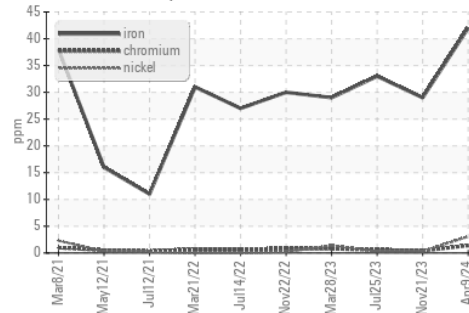
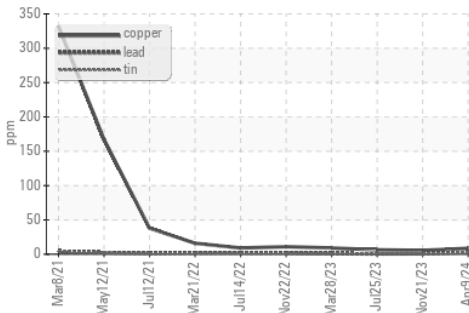
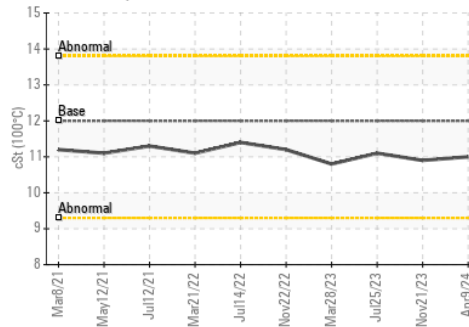
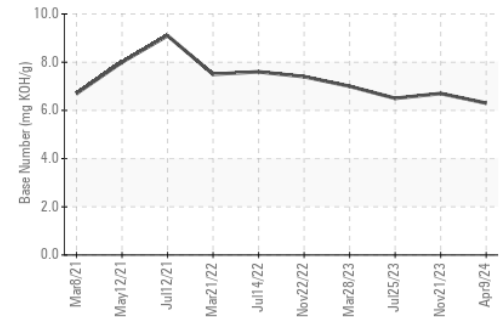
| | method | limit/base | current | history1 | history2 |
|------------------|----------|-----------------|-------------|----------|----------|
| Oxidation | Abs/.1mm | *ASTM D7414 >25 | 16.9 | 16.3 | 16.3 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 6.3 | 6.7 | 6.5 |

OIL ANALYSIS REPORT

FT-IR (Direct Trend)

Base Number

Viscosity @ 100°C


| PARAMETER | 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 | 12.00 | 11.0 | 10.9 |

GRAPHS
Ferrous Alloys

Non-ferrous Metals

Viscosity @ 100°C

Base Number


Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PCA0111498
Lab Number : 06152777
Unique Number : 10982855
Test Package : FLEET

Received : 18 Apr 2024
Tested : 18 Apr 2024
Diagnosed : 18 Apr 2024 - Wes Davis

PERDUE FARMS - Lewiston
 210 GRIFFINS QUARTER RD
 LEWISTON, NC
 US 27849
 Contact: NELSON WALLACE
 nelson.wallace2@perdue.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)

 T:
F: