

OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id 390483

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.

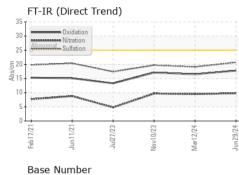
Fluid Condition

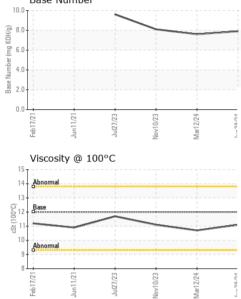
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

| SAMPLE INFORM | MATION | method | limit/base | current | history1 | history2 |
|--|---|--|---|---|---|---|
| Sample Number | | Client Info | | PCA0129125 | PCA0119029 | PCA0112244 |
| Sample Date | | Client Info | | 29 Jun 2024 | 12 Mar 2024 | 10 Nov 2023 |
| Machine Age | mls | Client Info | | 187966 | 175660 | 164904 |
| Oil Age | mls | Client Info | | 187966 | 175660 | 0 |
| Oil Changed | | Client Info | | Changed | 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 | 13 | 17 | 36 |
| Chromium | ppm | ASTM D5185m | >20 | <1 | <1 | <1 |
| Nickel | ppm | ASTM D5185m | >4 | <1 | 0 | <1 |
| Titanium | ppm | ASTM D5185m | - 1 | 4 | 0 | 1 |
| Silver | ppm | ASTM D5185m | >3 | 0 | 0 | 0 |
| Aluminum | ppm | | >20 | 3 | 3 | 2 |
| Lead | ppm | ASTM D5185m | >40 | 2 | <1 | 2 |
| Copper | ppm | | >330 | 2 | 2 | 3 |
| Tin | ppm | ASTM D5185m | >15 | <1 | 0 | <1 |
| Vanadium | ppm | ASTM D5185m | 210 | 0 | 0 | 0 |
| Cadmium | | ASTM D5185m | | | | 0 |
| | | | | U | 0 | U |
| | ppm | | limit/base | 0 current | 0 historv1 | - |
| ADDITIVES | | method | limit/base | current | history1 | history2 |
| ADDITIVES Boron | ppm | method ASTM D5185m | 2 | current 7 | history1 6 | history2 3 |
| ADDITIVES Boron Barium | ppm ppm | method ASTM D5185m ASTM D5185m | 2 0 | current 7 0 | history1 6 0 | history2 3 2 |
| ADDITIVES Boron Barium Molybdenum | ppm ppm ppm | method ASTM D5185m ASTM D5185m ASTM D5185m | 2 0 50 | current 7 0 52 | history1 6 0 64 | history2 3 2 60 |
| ADDITIVES Boron Barium Molybdenum Manganese | ppm ppm ppm ppm | method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 2 0 50 0 | current 7 0 52 0 | history1 6 0 64 0 | history2 3 2 60 <1 |
| ADDITIVES Boron Barium Molybdenum Manganese Magnesium | ppm ppm ppm ppm ppm | method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 2 0 50 0 950 | current 7 0 52 0 889 | history1 6 0 64 0 941 | history2 3 2 60 <1 875 |
| ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium | ppm ppm ppm ppm ppm ppm | method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 2 0 50 0 950 1050 | current 7 0 52 0 889 1136 | history1 6 0 64 0 941 1232 | history2 3 2 60 <1 875 1176 |
| ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus | ppm ppm ppm ppm ppm ppm ppm | method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 2 0 50 0 950 1050 995 | Current 7 0 52 0 889 1136 1081 | history1 6 0 64 0 941 1232 1140 | history2 3 2 60 <1 875 1176 991 |
| ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc | ppm ppm ppm ppm ppm ppm ppm | method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 2 0 50 0 950 1050 995 1180 | current 7 0 52 0 889 1136 1081 1320 | history1 6 0 64 0 941 1232 1140 1273 | history2 3 2 60 <1 875 1176 991 1221 |
| ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur | ppm ppm ppm ppm ppm ppm ppm ppm | method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 2 0 50 950 1050 995 1180 2600 | Current 7 0 52 0 889 1136 1081 1320 3831 | history1 6 0 64 0 941 1232 1140 1273 3356 | history2 3 2 60 <1 875 1176 991 1221 4026 |
| ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN | ppm ppm ppm ppm ppm ppm ppm ppm ppm | method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 2 0 50 950 1050 995 1180 2600 | current 7 0 52 0 889 1136 1081 1320 3831 current | history1 6 0 64 0 941 1232 1140 1273 3356 history1 | history2 3 2 60 <1 875 1176 991 1221 4026 history2 |
| ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon | ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm | method ASTM D5185m | 2 0 50 950 1050 995 1180 2600 | current 7 0 52 0 889 1136 1081 1320 3831 current 5 | history1 6 0 64 0 941 1232 1140 1273 3356 history1 7 | history2 3 2 60 <1 875 1176 991 1221 4026 history2 11 |
| ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium | ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm | method ASTM D5185m | 2 0 50 950 1050 995 1180 2600 limit/base >25 | current 7 0 52 0 889 1136 1081 1320 3831 current 5 3 | history1 6 0 64 0 941 1232 1140 1273 3356 history1 7 2 | history2 3 2 60 <1 875 1176 991 1221 4026 history2 11 0 |
| ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium | ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm | method ASTM D5185m | 2 0 50 0 950 1050 995 1180 2600 limit/base >25 >20 | current 7 0 52 0 889 1136 1081 1320 3831 current 5 3 2 | history1 6 0 64 0 941 1232 1140 1273 3356 history1 7 2 3 | history2 3 2 60 <1 875 1176 991 1221 4026 history2 11 0 3 |
| ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED | ppm ppm ppm ppm ppm ppm ppm ppm ppm TS | method ASTM D5185m | 2 0 50 0 950 1050 995 1180 2600 limit/base >25 -20 limit/base | current 7 0 52 0 889 1136 1081 1320 3831 current 5 3 2 current | history1 6 0 64 0 941 1232 1140 1273 3356 history1 7 2 3 history1 | history2 3 2 60 <1 875 1176 991 1221 4026 history2 11 0 3 history2 |
| ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % | ppm ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm | method ASTM D5185m | 2 0 50 0 950 1050 995 1180 2600 limit/base >25 >20 limit/base | current 7 0 52 0 889 1136 1081 1320 3831 current 5 3 2 current 0.6 | history1 6 0 64 0 941 1232 1140 1273 3356 history1 7 2 3 history1 0.7 | history2 3 2 60 <1 875 1176 991 1221 4026 history2 11 0 3 history2 0.7 |
| ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration | ppm ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm | method ASTM D5185m | 2 0 50 0 950 1050 995 1180 2600 <i>imit/base</i> >25 >20 <i>imit/base</i> >3 >20 | current 7 0 52 0 889 1136 1081 1320 3831 current 5 3 2 current 0.6 9.8 | history1 6 0 64 0 941 1232 1140 1273 3356 history1 7 2 3 history1 0.7 9.5 | history2 3 2 60 <1 875 1176 991 1221 4026 history2 11 0 3 history2 0.7 9.7 |
| ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % | ppm ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm | method ASTM D5185m | 2 0 50 0 950 1050 995 1180 2600 limit/base >25 >20 limit/base | current 7 0 52 0 889 1136 1081 1320 3831 current 5 3 2 current 0.6 | history1 6 0 64 0 941 1232 1140 1273 3356 history1 7 2 3 history1 0.7 | history2 3 2 60 <1 875 1176 991 1221 4026 history2 11 0 3 history2 0.7 |
| ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration | ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm | method ASTM D5185m | 2 0 50 0 950 1050 995 1180 2600 <i>imit/base</i> >25 >20 <i>imit/base</i> >3 >20 | current 7 0 52 0 889 1136 1081 1320 3831 current 5 3 2 current 0.6 9.8 | history1 6 0 64 0 941 1232 1140 1273 3356 history1 7 2 3 history1 0.7 9.5 | history2 3 2 60 <1 875 1176 991 1221 4026 history2 11 0 3 history2 0.7 9.7 |
| ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation | ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm | method ASTM D5185m ASTM D5185m | 2 0 50 0 950 1050 995 1180 2600 imit/base >25 >20 imit/base >3 >20 >30 | current 7 0 52 0 889 1136 1081 1320 3831 current 5 3 2 current 0.6 9.8 20.7 | history1 6 0 64 0 941 1232 1140 1273 3356 history1 7 2 3 history1 0.7 9.5 19.1 | history2 3 2 60 <1 875 1176 991 1221 4026 history2 11 0 3 history2 0.7 9.7 19.7 |



OIL ANALYSIS REPORT





| | VISUAL | | method | limit/base | current | history1 | history2 |
|--------------------------|----------------------|--------------------------|------------|--|----------------------|--------------------------|---------------------------------------|
| | White Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| | 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 |
| Mar12/24 - Jun29/24 - | Appearance | scalar | *Visual | NORML | NORML | NORML | NORML |
| Mar | Odor | scalar | *Visual | NORML | NORML | NORML | NORML |
| | Emulsified Water | scalar | *Visual | >0.2 | NEG | NEG | NEG |
| | Free Water | scalar | *Visual | | NEG | NEG | NEG |
| | FLUID PROPE | ERTIES | method | limit/base | current | history1 | history2 |
| | Visc @ 100°C | cSt | ASTM D445 | 12.00 | 11.1 | 10.7 | 11.1 |
| | GRAPHS | | | | | | |
| | Iron (ppm) | | | 100 | | | · · · · · · · · · · · · · · · · · · · |
| Mar12/24 - | 200 - Severe | | | 80 | | | |
| Mai | E 150 Abnormal | | | udd of | Abnormal | | |
| | 100 - 0 | | | | | | |
| | 50 | | | 2 | | | |
| | | //23+ | 2/24 - | | 12/1 | //23 | 224 |
| | Feb17/21 Jun11/21 | Jul27/23 Nov10/23 | Mar12/24 | Jun29/24 | Feb17/21 Jun11/21 | Jul27/23 Nov10/23 | Mar12/24 Jun29/24 |
| | Aluminum (ppm) | | | | Chromium (p | pm) | |
| | 50 Severe | | ! ! | 51 | Severe | | |
| | +0 + 0 | I I I I | 1 | - 40 | | | |
| 24 | 20 - Abnormal | | | udd a | Abnormal | | |
| Mar12/24 | | ***** | | 2 | | | - |
| 2 - | 10 | | | 10 | 0 | | |
| | | Jul27/23 - Nov10/23 - | Mar12/24 - | Jun29/24 | Feb17/21 | Jul27/23 - Nov10/23 - | Mar12/24 - Jun29/24 - |
| | | Jul | Mar | Juni | - | Jul | Mar |
| | Copper (ppm) | | | | Silicon (ppm) | | |
| | 400 Severe | + | | 60 | | | |
| | 틆 200 - | | | E 41 | 0 | | |
| | 100- | | | 21 | Abnormal | | |
| | | | | | | | |
| | Feb17/21 | Jul27/23 - | Mar12/24 - | Jun29/24 | Feb17/21 | Jul27/23 - | Mar1 2/24 + Jun 29/24 + |
| | - | | Marl | Jun2 | Feb1 | Jul2 Nov1 | Mar1 Jun2 |
| | Viscosity @ 100° | С | | 10.0 | Base Number | | |
| | 14 Abnormal | 4000000000 | | (b) HOX Bull Bull Bull Bull Bull Bull Bull Bull | | | |
| | 0012 #3 | | | ළි 6.1 ක | 0 | | |
| | | | | - the second sec | 0 | | |
| | 10 - Abnormal | | | es 2.0 | | | |
| | | 723 | 24 + | 0.0 | | 723 | 124 - |
| | Feb17/21 Jun11/21 | Jul27/23 Nov10/23 | Mar12/24 | Jun29/24 | Feb17/21 Jun11/21 | Jul27/23 Nov10/23 | Mar12/24 Jun29/24 |
| | , | 2 | 2 | ~ | | - Z | е Г |
| Laboratory | | | | | М | | LEASING #118 |
| Sample No Lab Numbe | | Receiv Testeo | | 2 Jul 2024 2 Jul 2024 | | | SENNETT ROAD LADELPHIA, PA |
| Unique Numbe | | Diagn | | Jul 2024 - W | les Davis | | US 19116 |



Test Package : MOB 1 (Additional Tests: TBN) Certificate L2367 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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Report Id: MILPHINE [WUSCAR] 06234451 (Generated: 07/12/2024 17:31:19) Rev: 1

Contact/Location: ROSTY VITER - MILPHINE

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