

OIL ANALYSIS REPORT



EFS057

Component Diesel Engine

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

DIAGNOSIS

A Recommendation

Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

Wear

Elui

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

Fluid Condition

The oil viscosity is higher than normal. The BN result indicates that there is suitable alkalinity remaining in the oil.

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|--|---|--|--|--|--|--|
| SAMPLE INFORM | IATION | method | limit/base | current | history1 | history2 |
| Sample Number | | Client Info | | PCA0100794 | | |
| Sample Date | | Client Info | | 22 Aug 2023 | | |
| Machine Age | mls | Client Info | | 340894 | | |
| Oil Age | mls | Client Info | | 340896 | | |
| Oil Changed | | Client Info | | Changed | | |
| Sample Status | | | | ATTENTION | | |
| CONTAMINATIO | NC | method | limit/base | current | history1 | history2 |
| Fuel | | WC Method | >5 | <1.0 | | |
| Glycol | | WC Method | | NEG | | |
| WEAR METALS | 5 | method | limit/base | current | history1 | history2 |
| Iron | ppm | ASTM D5185m | >100 | 44 | | |
| Chromium | ppm | ASTM D5185m | >20 | 2 | | |
| Nickel | ppm | ASTM D5185m | >4 | 0 | | |
| Titanium | ppm | ASTM D5185m | | 0 | | |
| Silver | ppm | ASTM D5185m | >3 | 0 | | |
| Aluminum | ppm | ASTM D5185m | >20 | 17 | | |
| Lead | ppm | ASTM D5185m | >40 | 0 | | |
| Copper | ppm | ASTM D5185m | >330 | 8 | | |
| Tin | ppm | ASTM D5185m | >15 | <1 | | |
| Vanadium | ppm | ASTM D5185m | | 0 | | |
| Cadmium | ppm | ASTM D5185m | | 0 | | |
| ADDITIVES | | method | limit/base | current | history1 | history2 |
| Boron | ppm | ASTM D5185m | 2 | 32 | | |
| | | | 0 | 0 | | |
| Barium | DDIII | | | • | | |
| | ppm ppm | | | 77 | | |
| Barium Molybdenum Manganese | ppm | ASTM D5185m | 50 | 77 <1 | | |
| Molybdenum Manganese | ppm ppm | ASTM D5185m ASTM D5185m | 50 0 | <1 | | |
| Molybdenum Manganese Magnesium | ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m | 50 0 950 | <1 178 | | |
| Molybdenum Manganese Magnesium Calcium | ppm ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 50 0 950 1050 | <1 178 2057 | | |
| Molybdenum Manganese Magnesium Calcium Phosphorus | ppm ppm ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 50 0 950 1050 995 | <1 178 2057 1009 | | |
| Molybdenum Manganese Magnesium Calcium Phosphorus Zinc | ppm ppm ppm ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 50 0 950 1050 995 1180 | <1 178 2057 1009 1242 | | |
| Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur | ppm ppm ppm ppm ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 50 0 950 1050 995 1180 2600 | <1 178 2057 1009 1242 4120 | | |
| Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT | ppm ppm ppm ppm ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 50 0 950 1050 995 1180 2600 limit/base | <1 178 2057 1009 1242 4120 current | history1 | history2 |
| Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT Silicon | ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m Method ASTM D5185m | 50 0 950 1050 995 1180 2600 limit/base | <1 178 2057 1009 1242 4120 current 4 | history1 | history2 |
| Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT Silicon Sodium | ppm ppm ppm ppm ppm ppm ppm ppm S ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 50 0 950 1050 995 1180 2600 limit/base >25 | <1 178 2057 1009 1242 4120 current 4 <1 | history1 | history2 |
| Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT Silicon Sodium | ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m Method ASTM D5185m | 50 0 950 1050 995 1180 2600 limit/base >25 | <1 178 2057 1009 1242 4120 current 4 | history1 | history2 |
| Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT Silicon Sodium | ppm ppm ppm ppm ppm ppm ppm ppm S ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 50 0 950 1050 995 1180 2600 limit/base >25 | <1 178 2057 1009 1242 4120 current 4 <1 | history1 | history2 |
| Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT Silicon Sodium Potassium INFRA-RED | ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 50 0 950 1050 995 1180 2600 limit/base >25 >20 | <1 178 2057 1009 1242 4120 current 4 <1 3 | history1 | history2 |
| Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT Silicon Sodium Potassium INFRA-RED Soot % | ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 50 0 950 1050 995 1180 2600 Iimit/base >25 >20 Iimit/base >3 | <1 178 2057 1009 1242 4120 current 4 <1 3 current | history1 history1 | history2 history2 |
| Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT Silicon Sodium Potassium INFRA-RED Soot % Nitration | ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185m ASTM D5185m | 50 0 950 1050 995 1180 2600 limit/base >25 >20 limit/base >3 >20 | <1 178 2057 1009 1242 4120 current 4 <1 3 current 0.9 | history1 history1 history1 | history2 history2 |
| Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT Silicon Sodium Potassium INFRA-RED Soot % Nitration | ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m *ASTM D7844 | 50 0 950 1050 995 1180 2600 limit/base >25 >20 limit/base >3 >20 | <1 178 2057 1009 1242 4120 current 4 <1 3 current 0.9 9.2 | history1 history1 | history2 history2 |
| Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAD. | ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185m ASTM D7844 *ASTM D7844 *ASTM D7844 | 50 0 950 1050 995 1180 2600 Imit/base >25 20 20 S20 S3 >20 S3 S3 S20 S3 S20 S3 S20 S3 S3 S20 S3 S3 S20 S3 S3 S3 S3 S3 S3 S3 S3 S3 S3 S3 S3 S3 | <1 178 2057 1009 1242 4120 current 4 <1 3 current 0.9 9.2 19.9 | history1 history1 history1 | history2 history2 |



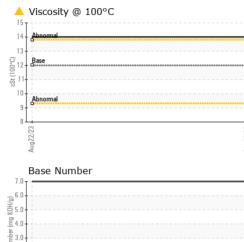
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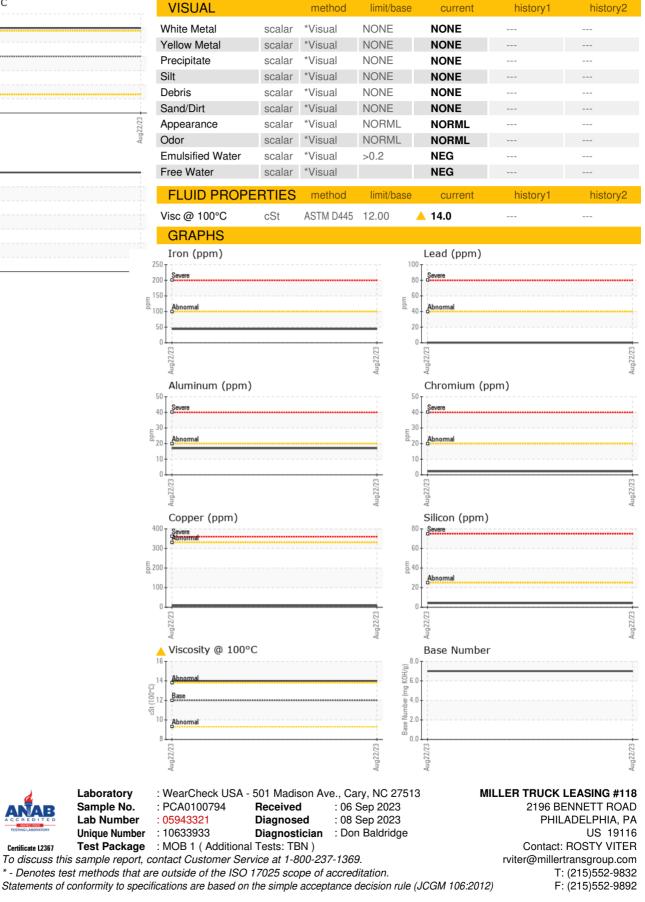
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Aug22/23

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Certificate L2367

Contact/Location: ROSTY VITER - MILPHINE