

OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL

Machine Id 3776

Component

Diesel Engine Fluic

PETRO CANADA DURON SHP 15W40 (38 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 INFOR | | method | iimit/base | current | riistory i | nistoryz |
|---|--|--|---|--|---|--|
| Sample Number | | Client Info | | GFL0071580 | GFL0053173 | GFL0061692 |
| Sample Date | | Client Info | | 11 Jul 2023 | 01 Mar 2023 | 25 Jan 2023 |
| Machine Age | hrs | Client Info | | 14722 | 14722 | 14722 |
| Oil Age | hrs | Client Info | | 600 | 600 | 600 |
| Oil Changed | | Client Info | | Changed | Changed | Changed |
| Sample Status | | | | NORMAL | NORMAL | NORMAL |
| | | | 11 1. 11 | | | |
| CONTAMINAT | ION | method | limit/base | current | history1 | history2 |
| Fuel | | WC Method | >5 | <1.0 | <1.0 | <1.0 |
| Glycol | | WC Method | | NEG | NEG | NEG |
| WEAR METAL | S | method | limit/base | current | historv1 | history2 |
| | 0 | | 100 | | - | 10 |
| Iron | ppm | ASTM D5185m | >100 | 9 | 5 | 12 |
| Chromium | ppm | ASTM D5185m | >20 | <1 | < | <1 |
| NICKEI | ppm | ASTM D5185m | >4 | 0 | 0 | 0 |
| Titanium | ppm | ASTM D5185m | 0 | 0 | 0 | 0 |
| Silver | ppm | ASTM D5185m | >3 | 0 | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >20 | 1 | <1 | 1 |
| Lead | ppm | ASTM D5185m | >40 | <1 | <1 | 4 |
| Copper | ppm | ASTM D5185m | >330 | 1 | 12 | 63 |
| Tin | ppm | ASTM D5185m | >15 | <1 | 0 | <1 |
| Vanadium | ppm | ASTM D5185m | | 0 | 0 | 0 |
| Cadmium | ppm | ASTM D5185m | | 0 | 0 | 0 |
| | | | | | | |
| ADDITIVES | | method | limit/base | | history1 | history2 |
| ADDITIVES Boron | ppm | Method ASTM D5185m | limit/base | current 5 | history1 7 | history2 10 |
| ADDITIVES Boron Barium | ppm ppm | Method ASTM D5185m ASTM D5185m | 0 0 | current 5 <1 | history1 7 0 | 10 0 |
| ADDITIVES Boron Barium Molybdenum | ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m | 0 0 60 | current 5 <1 64 | history1 7 0 63 | 10 0 65 |
| ADDITIVES Boron Barium Molybdenum Manganese | ppm ppm ppm | Method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 0 0 60 0 | current 5 <1 64 <1 | history1 7 0 63 <1 | 10 0 65 <1 |
| ADDITIVES Boron Barium Molybdenum Manganese Magnesium | ppm ppm ppm ppm ppm | Method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 0 0 60 0 1010 | current 5 <1 64 <1 1038 | history1 7 0 63 <1 928 | history2 10 0 65 <1 910 |
| ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium | ppm ppm ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 0 0 60 0 1010 1070 | current 5 <1 64 <1 1038 1198 | history1 7 0 63 <1 928 1157 | history2 10 0 65 <1 910 1141 |
| ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus | ppm ppm ppm ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 0 0 60 0 1010 1070 1150 | current 5 <1 64 <1 1038 1198 1137 | history1 7 0 63 <1 928 1157 1016 | history2 10 0 65 <1 910 1141 948 |
| ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc | ppm ppm ppm ppm ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 0 0 60 0 1010 1070 1150 1270 | current 5 <1 64 <1 1038 1198 1137 1407 | history1 7 0 63 <1 928 1157 1016 1267 | history2 10 0 65 <1 910 1141 948 1252 |
| ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur | 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 | 0 0 60 0 1010 1070 1150 1270 2060 | current 5 <1 64 <1 1038 1198 1137 1407 3920 | history1 7 0 63 <1 928 1157 1016 1267 3563 | history2 10 0 65 <1 910 1141 948 1252 3010 |
| 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 | 0 0 60 0 1010 1070 1150 1270 2060 | current 5 <1 64 <1 1038 1198 1137 1407 3920 | history1 7 0 63 <1 928 1157 1016 1267 3563 | history2 10 0 65 <1 910 1141 948 1252 3010 biotory2 |
| 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 | 0 0 60 0 1010 1070 1150 1270 2060 imit/base | 5 <1 64 <1 1038 1198 1137 1407 3920 current | history1 7 0 63 <1 928 1157 1016 1267 3563 history1 | history2 10 0 65 <1 910 1141 948 1252 3010 history2 |
| ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon | 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 Method | 0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 | current 5 <1 64 <1 1038 1198 1137 1407 3920 current 6 | history1 7 0 63 <1 928 1157 1016 1267 3563 history1 3 | history2 10 0 65 <1 910 1141 948 1252 3010 history2 5 |
| 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 ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 0 0 60 0 1010 1070 1150 1270 2060 imit/base >25 | current 5 <1 64 <1 1038 1198 1137 1407 3920 current 6 2 | history1 7 0 63 <1 928 1157 1016 1267 3563 history1 3 3 | history2 10 0 65 <1 910 1141 948 1252 3010 history2 5 3 |
| 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 ASTM D5185m | 0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 | current 5 <1 64 <1 1038 1198 1137 1407 3920 current 6 2 <1 | history1 7 0 63 <1 928 1157 1016 1267 3563 history1 3 3 0 | history2 10 0 65 <1 910 1141 948 1252 3010 history2 5 3 <1 |
| ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED | ppm ppm ppm ppm ppm ppm ppm ppm TS | method ASTM D5185m ASTM D5185m | IIIII/Dase 0 60 0 1010 1070 1150 1270 2060 Imit/base >25 >20 Imit/base | current 5 <1 64 <1 1038 1198 1137 1407 3920 current 6 2 <1 current current | history1 7 0 63 <1 928 1157 1016 1267 3563 history1 3 3 0 history1 | history2 10 0 65 <1 910 1141 948 1252 3010 history2 5 3 <1 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 | method ASTM D5185m ASTM D5185m | 0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >3 | current 5 <1 64 <1 1038 1198 1137 1407 3920 current 6 2 <1 current 0.3 | history1 7 0 63 <1 928 1157 1016 1267 3563 history1 3 0 history1 0.3 | history2 10 0 65 <1 910 1141 948 1252 3010 history2 5 3 <1 history2 0.4 |
| 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 ASTM D5185m | Imit/base 0 0 60 0 1010 1070 1150 1270 2060 Imit/base >25 >20 Imit/base >3 >20 | current 5 <1 64 <1 1038 1198 1137 1407 3920 current 6 2 <1 ourrent 0.3 7.6 | history1 7 0 63 <1 928 1157 1016 1267 3563 history1 3 3 0 history1 0.3 7.3 | history2 10 0 65 <1 910 1141 948 1252 3010 history2 5 3 <1 history2 0.4 9.1 |
| 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 | IIIII/Dase 0 60 0 1010 1070 1150 1270 2060 Iiiit/base >25 >20 limit/base >3 >20 >30 | current 5 <1 64 <1 1038 1198 1137 1407 3920 current 6 2 <1 0.3 7.6 19.2 | history1 7 0 63 <1 928 1157 1016 1267 3563 history1 3 0 history1 0 history1 0.3 7.3 19.2 | history2 10 0 65 <1 910 1141 948 1252 3010 history2 5 3 <1 history2 0.4 9.1 20.4 |
| 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 TS ppm ppm ppm ppm | method ASTM D5185m ASTM D5185m | Imit/base 0 60 0 1010 1070 1150 1270 2060 Imit/base >25 >20 Imit/base >3 >20 >30 | current 5 <1 64 <1 1038 1198 1137 1407 3920 current 6 2 <1 0.3 7.6 19.2 | history1 7 0 63 <1 928 1157 1016 1267 3563 history1 3 3 0 history1 0.3 7.3 19.2 history1 | history2 10 0 65 <1 910 1141 948 1252 3010 history2 5 3 <1 history2 0.4 9.1 20.4 |
| ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAD | ppm ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm ppm ppm ppm ppm | method ASTM D5185m ASTM D5185m | Imit/base 0 0 60 0 1010 1070 1150 1270 2060 Imit/base >25 | current 5 <1 64 <1 1038 1198 1137 1407 3920 current 6 2 <1 0.3 7.6 19.2 current | history1 7 0 63 <1 928 1157 1016 1267 3563 history1 3 3 0 history1 0.3 7.3 19.2 history1 | history2 10 0 65 <1 910 1141 948 1252 3010 history2 5 3 <1 history2 0.4 9.1 20.4 history2 |
| ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAE Oxidation | ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm | method ASTM D5185m ASTM D71844 *ASTM D7624 *ASTM D7414 | Imit/base 0 60 0 1010 1070 1150 1270 2060 Imit/base >25 >20 Imit/base >3 >20 >30 Imit/base | current 5 <1 64 <1 1038 1198 1137 1407 3920 current 6 2 <1 0.3 7.6 19.2 current 14.8 | history1 7 0 63 <1 928 1157 1016 1267 3563 history1 3 3 0 history1 0.3 7.3 19.2 history1 14.6 | history2 10 0 65 <1 910 1141 948 1252 3010 history2 5 3 <1 history2 0.4 9.1 20.4 history2 16.4 |



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 |
| Appearance | scalar | *Visual | NORML | NORML | NORML | NORML |
| 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 | RTIES | method | limit/base | current | history1 | history2 |
| Visc @ 100°C | cSt | ASTM D445 | 15.4 | 13.8 | 13.6 | 13.2 |
| GRAPHS | | | | | | |
| Ferrous Alloys | | | | | | |





Test Package : FLEET 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) Contact: JORGE COSTA

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Jul11/23

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