

OIL ANALYSIS REPORT

Sample Rating Trend





Component Diesel Engine Fluid

PETRO CANADA DURON SHP 15W40 (--- GAL)

DIAGNOSIS Recommendation

Resample at the next service interval to monitor.

Machine Id

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

Fluid Condition

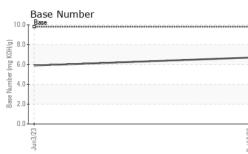
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

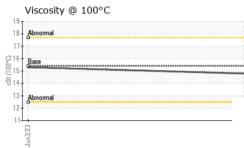
| SAMPLE INFORI | MATION | method | limit/base | current | history1 | history2 |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|
| Sample Number | | Client Info | | GFL0089140 | GFL0069844 | |
| Sample Date | | Client Info | | 12 Oct 2023 | 03 Jun 2023 | |
| Machine Age | hrs | Client Info | | 4537 | 4215 | |
| Oil Age | hrs | Client Info | | 2400 | 600 | |
| Oil Changed | | Client Info | | Changed | Changed | |
| Sample Status | | | | NORMAL | NORMAL | |
| CONTAMINAT | ION | method | limit/base | current | history1 | history2 |
| Fuel | | WC Method | >3.0 | <1.0 | <1.0 | |
| Glycol | | WC Method | | NEG | NEG | |
| WEAR METAL | S | method | limit/base | current | history1 | history2 |
| Iron | ppm | ASTM D5185m | >90 | 29 | 51 | |
| Chromium | ppm | ASTM D5185m | >20 | <1 | 1 | |
| Nickel | ppm | ASTM D5185m | >2 | <1 | 0 | |
| Titanium | ppm | ASTM D5185m | >2 | <1 | 0 | |
| Silver | ppm | ASTM D5185m | >2 | <1 | 0 | |
| Aluminum | ppm | ASTM D5185m | >20 | 4 | 2 | |
| Lead | ppm | ASTM D5185m | >40 | 1 | <1 | |
| Copper | ppm | ASTM D5185m | >330 | 2 | 2 | |
| Tin | ppm | ASTM D5185m | >15 | 0 | 0 | |
| Vanadium | ppm | ASTM D5185m | | <1 | 0 | |
| Cadmium | ppm | ASTM D5185m | | 0 | 0 | |
| | | | | | | |
| ADDITIVES | | method | limit/base | | history1 | history2 |
| ADDITIVES Boron | ppm | method ASTM D5185m | limit/base | | history1 <1 | history2 |
| | ppm ppm | ASTM D5185m | | current 2 <1 | | |
| Boron Barium | ppm | ASTM D5185m ASTM D5185m | 0 | 2 <1 | <1 | |
| Boron Barium Molybdenum | ppm ppm | ASTM D5185m | 0 0 60 | 2 | <1 0 63 | |
| Boron Barium | ppm | ASTM D5185m ASTM D5185m ASTM D5185m | 0 0 60 | 2 <1 63 | <1 0 | |
| Boron Barium Molybdenum Manganese | ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 0 0 60 0 | 2 <1 63 0 | <1 0 63 <1 | |
| Boron Barium Molybdenum Manganese Magnesium | ppm ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 0 0 60 0 1010 | 2 <1 63 0 951 | <1 0 63 <1 1034 | |
| 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 | 2 <1 63 0 951 1092 | <1 0 63 <1 1034 1214 | |
| 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 | 0 0 60 0 1010 1070 1150 | 2 <1 63 0 951 1092 1042 | <1 0 63 <1 1034 1214 1099 | |
| 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 | 0 0 60 0 1010 1070 1150 1270 | 2 <1 63 0 951 1092 1042 1289 | <1 0 63 <1 1034 1214 1099 1385 | |
| Boron Barium 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 ASTM D5185m ASTM D5185m ASTM D5185m | 0 0 60 0 1010 1070 1150 1270 2060 | 2 <1 63 0 951 1092 1042 1289 3033 | <1 0 63 <1 1034 1214 1099 1385 3381 | |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon | ppm ppm ppm ppm ppm ppm ppm ppm TS | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method | 0 0 60 1010 1070 1150 1270 2060 | 2 <1 63 0 951 1092 1042 1289 3033 current | <1 0 63 <1 1034 1214 1099 1385 3381 history1 9 | history2 |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN | 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 1010 1070 1150 1270 2060 | 2 <1 63 0 951 1092 1042 1289 3033 current 5 | <1 0 63 <1 1034 1214 1099 1385 3381 history1 | history2 |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium | ppm ppm ppm ppm ppm ppm ppm ppm TS | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m | 0 0 60 1010 1070 1150 1270 2060 kimit/base >25 | 2 <1 63 0 951 1092 1042 1289 3033 current 5 7 | <1 0 63 <1 1034 1214 1099 1385 3381 history1 9 6 | history2 |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium | ppm ppm ppm ppm ppm ppm ppm ppm TS | ASTM D5185m ASTM D5185m | 0 0 0 1010 1070 1150 1270 2060 limit/base >25 | 2 <1 63 0 951 1092 1042 1289 3033 current 5 7 3 | <1 0 63 <1 1034 1214 1099 1385 3381 history1 9 6 3 | history2 |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % | ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm | ASTM D5185m ASTM D5185m | 0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >20 | 2 <1 63 0 951 1092 1042 1289 3033 current 5 7 3 3 <i>current</i> 1 | <1 0 63 <1 1034 1214 1099 1385 3381 history1 9 6 3 3 history1 1.3 | history2 history2 |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED | ppm ppm ppm ppm ppm ppm ppm ppm TS | ASTM D5185m ASTM D5185m | 0 0 0 1010 1070 1150 1270 2060 limit/base >25 | 2 <1 63 0 951 1092 1042 1289 3033 current 5 7 3 3 | <1 0 63 <1 1034 1214 1099 1385 3381 history1 9 6 3 3 <i>history</i> 1 | history2 history2 |
| 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 | ASTM D5185m ASTM D5185m | 0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >20 | 2 <1 63 0 951 1092 1042 1289 3033 <i>current</i> 5 7 3 <i>current</i> 1 1 11.4 | <1 0 63 <1 1034 1214 1099 1385 3381 history1 9 6 3 history1 1.3 13.6 | history2 history2 |
| 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 | ASTM D5185m ASTM D7844 *ASTM D7844 | 0 0 0 1010 1070 1150 1270 2060 2060 225 20 220 20 1imit/base >6 >20 >20 30 | 2 <1 63 0 951 1092 1042 1289 3033 <i>current</i> 5 7 3 <i>current</i> 1 1 11.4 24.0 | <1 0 63 <1 1034 1214 1099 1385 3381 history1 9 6 3 history1 1.3 13.6 27.5 history1 | history2 history2 history2 |
| 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 | ASTM D5185m ASTM D5185m | 0 0 0 1010 1070 1150 1270 2060 2060 225 20 220 20 20 20 20 20 20 20 20 20 20 20 | 2 <1 63 0 951 1092 1042 1289 3033 current 5 7 3 current 1 11.4 24.0 | <1 0 63 <1 1034 1214 1099 1385 3381 history1 9 6 3 3 history1 1.3 13.6 27.5 | history2 history2 history2 history2 |



OIL ANALYSIS REPORT

VISUAL





| | VISUAL | | method | iimii/base | current | riistory i | nistory2 |
|-----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-------------------|--------------|
| | 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 | |
| | | | | | NONE | | |
| 23 | Sand/Dirt | scalar | *Visual | NONE | | NONE | |
| UCTI 2/23 | 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 PROI | PERTIES | method | limit/base | e current | history1 | history2 |
| | Visc @ 100°C | cSt | ASTM D445 | 15.4 | 14.8 | 15.3 | |
| | GRAPHS | | | | | | |
| | Ferrous Alloys | | | | | | |
| | 60 iron | | | | | | |
| | 50 - the second | | | | | | |
| | 40 | | | | | | |
| | | | | | | | |
| | 톱 30 - | | | | | | |
| | 20 - | | | | | | |
| | 10 | | | | | | |
| | 10 | | | | | | |
| | | | ******* | ~ | | | |
| | Jun3/23 | | | 0ct12/23 | | | |
| | | | | 00 | | | |
| | Non-ferrous Me | etals | | | | | |
| | 10 copper 1 | | | | | | |
| | 8 | | | | | | |
| | annexes tin | | | | | | |
| | 6 | | | | | | |
| | mdd | | | | | | |
| | 4 + | | | | | | |
| | 2 | | | | | | |
| | | | automatemitemitemitemitemitemitemitemitemitemi | and the second se | | | |
| | | | ****** | ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~ | | | |
| | Jun3/23 | | | 0ct12/23 | | | |
| | | | | Oct | | | |
| | Viscosity @ 100 | 0°C | | | Base Numbe | r | |
| | | | | 1 | 0.0 Base | | |
| | | | | | 8.0 | | |
| | 17- | | | Base Number (mg KOH(g) | 8.0 | | |
| 000 | C16 Base 15 37 14 | | | ng KC | 6.0 | | |
| 10.00 | 은 15 | | | ber (n | | | |
| Ċ | 3 14 | | | Numl | 4.0 | | |
| | 13 - Abnormal | | | Base | 2.0 - | | |
| | 12 | | | | 2.0 | | |
| | 11 | | | | 0.0 | | |
| | Jun3/23 | | | | Jun3/23 - | | |
| | Juni | | | 0ct12/23 | Jun | | |
| | | | | - | | | |
| | : WearCheck USA | | | | 13 GFL Er | vironmental - 418 | |
| | : GFL0089140 | Received | | Oct 2023 | | 22 | 2001 Hoover |
| r | : 05984433 | Diagnos | | Oct 2023 | | | Warren, |
| er | : 10701728 | Diagnost | tician : We | es Davis | | - | US 480 |
| ge | : FLEET | | | | | | tact: JIM HE |
| | contact Customer S | | | | | jhe | ss@gflenv.co |
| | ra autoida af tha ISI | | | | | | |

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)

Certificate L2367

Ē

Т:

F: