

OIL ANALYSIS REPORT

Sample Rating Trend







Machine Id 550008

Component **Diesel Engine** Fluic

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

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

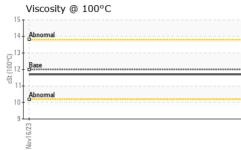
Fluid Condition

The condition of the oil is acceptable for the time in service.

| SAMPLE INFOR | MATION | method | limit/base | current | history1 | history2 |
|---|--|--|--|--|---|--|
| Sample Number | | Client Info | | GFL0047683 | | |
| Sample Date | | Client Info | | 16 Nov 2023 | | |
| Machine Age | hrs | Client Info | | 0 | | |
| Oil Age | hrs | Client Info | | 0 | | |
| Oil Changed | | Client Info | | N/A | | |
| Sample Status | | | | NORMAL | | |
| CONTAMINAT | | method | limit/base | current | history1 | history2 |
| | | | | | | |
| Fuel | | WC Method | >2.1 | <1.0 | | |
| Glycol | | WC Method | | NEG | | |
| WEAR METAL | .S | method | limit/base | current | history1 | history2 |
| Iron | ppm | ASTM D5185(m) | >51 | 27 | | |
| Chromium | ppm | ASTM D5185(m) | >11 | <1 | | |
| Nickel | ppm | ASTM D5185(m) | >5 | <1 | | |
| Titanium | ppm | ASTM D5185(m) | | 0 | | |
| Silver | ppm | ASTM D5185(m) | >3 | <1 | | |
| Aluminum | ppm | ASTM D5185(m) | >31 | 1 | | |
| Lead | ppm | ASTM D5185(m) | >26 | <1 | | |
| Copper | ppm | ASTM D5185(m) | >26 | 4 | | |
| Tin | ppm | ASTM D5185(m) | >4 | 0 | | |
| Antimony | ppm | ASTM D5185(m) | | 0 | | |
| Vanadium | ppm | ASTM D5185(m) | | 0 | | |
| Beryllium | ppm | ASTM D5185(m) | | 0 | | |
| Cadmium | ppm | ASTM D5185(m) | | 0 | | |
| oddinidini | ppm | | | 0 | | |
| ADDITIVES | ppm | method | limit/base | current | history1 | history2 |
| | ppm | | limit/base | | | history2 |
| ADDITIVES | | method | | current | history1 | |
| ADDITIVES Boron | ppm | method ASTM D5185(m) | 2 | current 9 | history1 | |
| ADDITIVES Boron Barium | ppm ppm | method ASTM D5185(m) ASTM D5185(m) | 2 0 50 | current 9 <1 | history1 | |
| ADDITIVES Boron Barium Molybdenum | ppm ppm ppm | method ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) | 2 0 50 | current 9 <1 63 | history1 | |
| ADDITIVES Boron Barium Molybdenum Manganese | ppm ppm ppm ppm | method ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) | 2 0 50 0 | current 9 <1 63 0 | history1 | |
| ADDITIVES Boron Barium Molybdenum Manganese Magnesium | ppm ppm ppm ppm ppm | method ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) | 2 0 50 0 950 | current 9 <1 63 0 1035 | history1 | |
| ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium | ppm ppm ppm ppm ppm ppm | method ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) | 2 0 50 0 950 1050 | current 9 <1 63 0 1035 1068 | history1 | |
| ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur | ppm ppm ppm ppm ppm ppm ppm | method ASTM D5185(m) | 2 0 50 0 950 1050 995 1180 2600 | current 9 <1 63 0 1035 1068 999 | history1 | |
| ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc | ppm ppm ppm ppm ppm ppm ppm | method ASTM D5185(m) | 2 0 50 0 950 1050 995 1180 2600 | current 9 <1 63 0 1035 1068 999 1249 | history1 | |
| ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur | ppm ppm ppm ppm ppm ppm ppm ppm ppm | method ASTM D5185(m) | 2 0 50 0 950 1050 995 1180 2600 | current 9 <1 63 0 1035 1068 999 1249 2362 | history1 | |
| ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium | ppm ppm ppm ppm ppm ppm ppm ppm ppm | method ASTM D5185(m) | 2 0 50 950 1050 995 1180 2600 | 9 <1 63 0 1035 1068 999 1249 2362 <1 | history1 | |
| ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN | ppm ppm ppm ppm ppm ppm ppm ppm ppm | method ASTM D5185(m) | 2 0 50 950 1050 995 1180 2600 limit/base | 9 <1 63 0 1035 1068 999 1249 2362 <1 current | history1 | history2 |
| ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon | ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm | method ASTM D5185(m) | 2 0 50 950 1050 995 1180 2600 limit/base >22 | current 9 <1 63 0 1035 1068 999 1249 2362 <1 current 3 | history1 | history2 |
| ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium | ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm | method ASTM D5185(m) | 2 0 50 950 1050 995 1180 2600 limit/base >22 >31 | current 9 <1 63 0 1035 1068 999 1249 2362 <1 current 3 2 | history1 | history2 |
| ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium INFRA-RED | ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm | method ASTM D5185(m) | 2 0 50 0 950 1050 995 1180 2600 imit/base >22 >31 >20 imit/base | 9 <1 63 0 1035 1068 999 1249 2362 <1 current 3 2 0 current 3 2 0 current | history1 | history2 |
| ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % | ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm | method ASTM D5185(m) | 2 0 50 0 950 1050 995 1180 2600 imit/base >22 >31 >20 imit/base >3 | current 9 <1 63 0 1035 1068 999 1249 2362 <1 3 2 0 0 0.1 | history1 | history2 history2 |
| ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium INFRA-RED | ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm | method ASTM D5185(m) | 2 0 50 0 950 1050 995 1180 2600 imit/base >22 >31 >20 imit/base >3 >20 | 9 <1 63 0 1035 1068 999 1249 2362 <1 current 3 2 0 current 3 2 0 current | history1 | history2 history2 |
| ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation | ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm | method ASTM D5185(m) ASTM D7844* ASTM D7624* ASTM D74115* | 2 0 50 1050 950 1050 995 1180 2600 imit/base >22 >31 >20 imit/base >3 >20 | 9 <1 63 0 1035 1068 999 1249 2362 <1 current 3 2 0 current 3 2 0 current 0.1 9.3 19.8 | history1 history1 history1 | history2 history2 history2 |
| ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation | ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm | method ASTM D5185(m) ASTM D7844* ASTM D7624* ASTM D7415* method | 2 0 0 50 0 950 1050 995 1180 2600 imit/base >22 >31 >20 imit/base >3 >20 >30 | current 9 <1 63 0 1035 1068 999 1249 2362 <1 Current 3 2 0 current 0 current 9.3 19.8 | history1 | history2 history2 history2 |
| ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation | ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm | method ASTM D5185(m) ASTM D7844* ASTM D7624* ASTM D74115* | 2 0 50 0 950 1050 995 1180 2600 imit/base >22 >31 >20 imit/base >3 >20 | current 9 <1 63 0 1035 1068 999 1249 2362 <1 current 3 2 0 current 0.1 9.3 19.8 current 17.3 | history1 history1 history1 history1 history1 history1 | history2 history2 history2 |



OIL ANALYSIS REPORT



| °C | | VISUAL | | method | limit/base | current | history1 | history2 |
|--|-------------------|---------------------|----------------------|---------------|------------------|-----------------|----------------|-------------------------------|
| | v | Vhite Metal | scalar | Visual* | NONE | NONE | | |
| | Y | ellow Metal | scalar | Visual* | NONE | NONE | | |
| | | recipitate | scalar | Visual* | NONE | NONE | | |
| | | Silt | scalar | Visual* | NONE | NONE | | |
| | | ebris | scalar | Visual* | NONE | NONE | | |
| | | and/Dirt | scalar | Visual* | NONE | NONE | | |
| | | ppearance | scalar | Visual* | NORML | NORML | | |
| Moul 6.03 | |)dor | scalar | Visual* | NORML | NORML | | |
| _ | | mulsified Water | scalar | Visual* | >0.21 | NEG | | |
| | | ree Water | scalar | Visual* | 20.E1 | NEG | | |
| | | | | | 11 | | Inforte mod | la la tana 0 |
| | | | | method | limit/base | current | history1 | history2 |
| | V | /isc @ 100°C | cSt | ASTM D7279(m) | 12.00 | 11.7 | | |
| | | GRAPHS | | | | | | |
| | 200 | Iron (ppm) | | | 100 | Lead (ppm) | | |
| | | Severe | | | 80 | Severe | | |
| | 150- | | | | 00 | | | |
| | 튭 100 · | | | | E 40 | | | |
| | 50. | Abnormal | | | 20 | Abnormal | | |
| | 0. | | | | 0 | | | |
| | 0. | Vov16/23 - | | | Nov16/23 | Vov16/23 | | 6/23 |
| | | Nov1 | | | Nov1 | Nov1 | | Nov16/23 |
| | | Aluminum (ppm) | | | | Chromium (ppr | n) | |
| | 60 | Severe | | | 25 | Severe | | |
| | 50. | | | | 20 | | | |
| | 40 - Ed 30 - | Abnormal | | | 15 E | Abnormal | | |
| | 20 | | | | th 10 | Abnormal | | |
| | 10- | | | | 5 | | | |
| | 0. | ~ | | | 0 | | | |
| | | Nov16/23 | | | Nov16/23 | Nov16/23 | | Nov16/23 |
| | | — | | | No | | | No |
| | 150- | Copper (ppm) | | | 40 | Silicon (ppm) | | |
| | 150 | Severe | | | 40 | Severe | | |
| | 100- | | | | 30 | | | |
| | bpm | | | | 톱 20 | Abnormal | | |
| | 50. | Abnormal | | | 10 | | | |
| | | Abnormal | | | | | | |
| | 0. | 23 | | | 0 | | | 23 - |
| | | Nov16/23 | | | Nov16/23 | Nov16/23 | | Nov16/23 |
| | | Viscosity @ 100°C | | | 2 | Zoot % | | 2 |
| | 15 | | | | 6.0 | Τ | | |
| | 14. | Abnormal | | | 5.0 | Severe | | |
| | (j.13. (j.001) | Race | | | 4.0 53.0 | Abnormal | | |
| | 2012 · 53 11 | | | | 53.0 | | | |
| | 10 | Abnormal | | | 2.0 | | | |
| | 9. | | | | 0.0 | | | |
| | | Nov16/23 | | | Nov16/23 | Nov16/23 | | Nov16/23 |
| | | Nov | | | Nov | Nov | | Nov |
| CALA Laboratory | : \ | VearCheck - C8-11 | 75 Annle | by Line. Bur | linaton, ON I | 7L 5H9 GFL Envi | ironmental - 3 | 55 - Saskatoon |
| Sample No. | | | Received | | Nov 2023 | | | 100 Cory Road |
| ISO 17025:2017 Lab Number | : 0 |)2597047 | Diagnos | | Nov 2023 | | | Saskatoon, SK |
| Accredited Unique Numbe | | | Diagnost | | s Davis | | | CA S7K 3J7 |
| Test Package | | MOB 1 (Additional 7 | | | | | | Ryan Polichuk |
| To discuss this sample report Test denoted (*) outside scop | | | | | | al lab | | k@gflenv.com (306)244-9500 |
| Validity of results and interpre | | | | | | | 1. | (306)244-9500 F: |
| andity of results and interpre | παιιΟΙ | | anipi c a | na mormalio | n as supplied | <i></i> | | 1. |