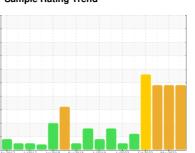


OIL ANALYSIS REPORT

Sample Rating Trend



GLYCOL



Machine Id
4790
Component

Diesel Engine

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

DIAGNOSIS

Recommendation

We advise that you check for the source of the coolant leak. We recommend that you drain the oil from the component if this has not already been done. We advise that you flush the component thoroughly before re-filling with oil. We recommend an early resample to monitor this condition.

Wear

All component wear rates are normal.

Contamination

Test for glycol is positive. There is a light concentration of glycol present in the oil.

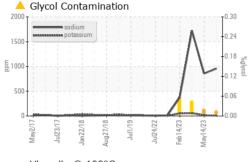
Fluid Condition

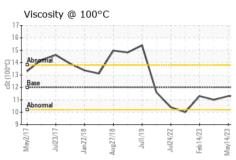
The oil is no longer serviceable due to the presence of contaminants.

| LTR) | | Aay2017 Juli | 017 Jan2018 Aug2018 | Jul2019 Jul2022 Feb2023 | May2023 | |
|--|--|--|---|--|---|---|
| SAMPLE INFOR | MATION | method | limit/base | current | history1 | history2 |
| Sample Number | | Client Info | | GFL0097641 | GFL0078004 | GFL0077970 |
| Sample Date | | Client Info | | 10 Sep 2023 | 14 May 2023 | 29 Apr 2023 |
| Machine Age | hrs | Client Info | | 14575 | 14154 | 14033 |
| Oil Age | hrs | Client Info | | 0 | 0 | 0 |
| Oil Changed | | Client Info | | N/A | N/A | N/A |
| Sample Status | | | | ABNORMAL | ABNORMAL | ABNORMAL |
| CONTAMINAT | ION | method | limit/base | current | history1 | history2 |
| Fuel | | WC Method | >5 | <1.0 | <1.0 | <1.0 |
| WEAR METAL | S | method | limit/base | current | history1 | history2 |
| Iron | ppm | ASTM D5185(m) | >110 | 41 | 24 | 62 |
| Chromium | ppm | ASTM D5185(m) | >4 | 2 | <1 | 2 |
| Nickel | ppm | ASTM D5185(m) | >2 | 0 | 0 | <1 |
| Titanium | ppm | ASTM D5185(m) | | 0 | 0 | <1 |
| Silver | ppm | ASTM D5185(m) | >2 | <1 | 0 | 0 |
| Aluminum | ppm | ASTM D5185(m) | >25 | 6 | 5 | 16 |
| Lead | ppm | ASTM D5185(m) | >45 | 2 | <1 | 2 |
| Copper | ppm | ASTM D5185(m) | >85 | 24 | 6 | 25 |
| Tin | ppm | ASTM D5185(m) | >4 | 0 | 0 | <1 |
| Antimony | ppm | ASTM D5185(m) | | 0 | 0 | 0 |
| Vanadium | ppm | ASTM D5185(m) | | 0 | 0 | 0 |
| Beryllium | ppm | ASTM D5185(m) | | 0 | 0 | 0 |
| Cadmium | ppm | ASTM D5185(m) | | 0 | 0 | 0 |
| ADDITIVES | | method | limit/base | current | history1 | history2 |
| Boron | ppm | ASTM D5185(m) | 2 | 2 | <1 | 2 |
| Barium | ppm | ASTM D5185(m) | 0 | <1 | 0 | 0 |
| Molybdenum | ppm | AOTH PEROF | | | | O |
| | PP | ASTM D5185(m) | 50 | 104 | 95 | 132 |
| Manganese | ppm | ASTM D5185(m) ASTM D5185(m) | 0 | 104 0 | 95 <1 | |
| Manganese Magnesium | | . , | | | | 132 |
| - | ppm | ASTM D5185(m) | 0 | 0 | <1 | 132 |
| Magnesium | ppm ppm | ASTM D5185(m) ASTM D5185(m) | 0 950 | 0 879 | <1 966 | 132 1 875 |
| Magnesium Calcium | ppm ppm | ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) | 0 950 1050 | 0 879 994 | <1 966 1072 | 132 1 875 1027 |
| Magnesium Calcium Phosphorus | ppm ppm ppm | ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) | 0 950 1050 995 | 0 879 994 773 | <1 966 1072 1055 | 132 1 875 1027 917 |
| Magnesium Calcium Phosphorus Zinc | ppm ppm ppm ppm | ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) | 0 950 1050 995 1180 | 0 879 994 773 1096 | <1 966 1072 1055 1170 | 132 1 875 1027 917 1093 |
| Magnesium Calcium Phosphorus Zinc Sulfur | ppm ppm ppm ppm ppm ppm | ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) | 0 950 1050 995 1180 | 0 879 994 773 1096 2262 | <1 966 1072 1055 1170 2552 | 132 1 875 1027 917 1093 2335 |
| Magnesium Calcium Phosphorus Zinc Sulfur Lithium | ppm ppm ppm ppm ppm ppm | ASTM D5185(m) | 0 950 1050 995 1180 2600 | 0 879 994 773 1096 2262 <1 | <1 966 1072 1055 1170 2552 <1 | 132 1 875 1027 917 1093 2335 <1 |
| Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN | ppm ppm ppm ppm ppm ppm ppm | ASTM D5185(m) METHOD | 0 950 1050 995 1180 2600 | 0 879 994 773 1096 2262 <1 | <1 966 1072 1055 1170 2552 <1 history1 | 132 1 875 1027 917 1093 2335 <1 |
| Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon | ppm ppm ppm ppm ppm ppm ppm | ASTM D5185(m) MASTM D5185(m) MEthod ASTM D5185(m) | 0 950 1050 995 1180 2600 | 0 879 994 773 1096 2262 <1 current | <1 966 1072 1055 1170 2552 <1 history1 8 | 132 1 875 1027 917 1093 2335 <1 history2 |
| Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium | ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185(m) Method ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) | 0 950 1050 995 1180 2600 limit/base >30 | 0 879 994 773 1096 2262 <1 current 18 ▲ 955 | <1 966 1072 1055 1170 2552 <1 history1 8 858 | 132 1 875 1027 917 1093 2335 <1 history2 10 1725 |
| Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium | ppm | ASTM D5185(m) METHOD ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) | 0 950 1050 995 1180 2600 limit/base >30 | 0 879 994 773 1096 2262 <1 current 18 9555 7 | <1 966 1072 1055 1170 2552 <1 history1 8 ▲ 858 ▲ 13 | 132 1 875 1027 917 1093 2335 <1 history2 10 1725 57 |
| Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium Glycol | ppm | ASTM D5185(m) MASTM D5185(m) MASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) | 0 950 1050 995 1180 2600 limit/base >30 >20 | 0 879 994 773 1096 2262 <1 current 18 ▲ 955 ▲ 7 | <1 966 1072 1055 1170 2552 <1 history1 8 858 13 0.022 | 132 1 875 1027 917 1093 2335 <1 history2 10 1725 57 |
| Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED | ppm | ASTM D5185(m) MASTM D5185(m) MASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) | 0 950 1050 995 1180 2600 limit/base >30 >20 | 0 879 994 773 1096 2262 <1 current 18 ▲ 955 ▲ 7 ▲ 0.016 | <1 966 1072 1055 1170 2552 <1 history1 8 ▲ 858 ▲ 13 ▲ 0.022 history1 | 132 1 875 1027 917 1093 2335 <1 history2 10 △ 1725 △ 57 △ 0.047 history2 |
| Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED Soot % | ppm | ASTM D5185(m) MASTM D5185(m) MASTM D5185(m) MASTM D5185(m) ASTM D7922* Method ASTM D7844* | 0 950 1050 995 1180 2600 limit/base >30 >20 | 0 879 994 773 1096 2262 <1 current 18 △ 955 △ 7 △ 0.016 current 0.5 | <1 966 1072 1055 1170 2552 <1 history1 8 ▲ 858 ▲ 13 ▲ 0.022 history1 0.2 | 132 1 875 1027 917 1093 2335 <1 history2 10 △ 1725 △ 57 △ 0.047 history2 0.6 |
| Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED Soot % Nitration | ppm | ASTM D5185(m) METHOD ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D7845 METHOD ASTM D7922* METHOD ASTM D7844* ASTM D7624* ASTM D7624* | 0 950 1050 995 1180 2600 limit/base >30 >20 | 0 879 994 773 1096 2262 <1 current 18 ▲ 955 ▲ 7 ▲ 0.016 current 0.5 13.5 | <1 966 1072 1055 1170 2552 <1 history1 8 ▲ 858 ▲ 13 ▲ 0.022 history1 0.2 10.2 | 132 1 875 1027 917 1093 2335 <1 history2 10 △ 1725 △ 57 △ 0.047 history2 0.6 15.5 |



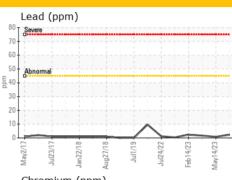
OIL ANALYSIS REPORT

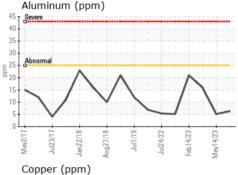


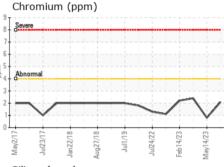


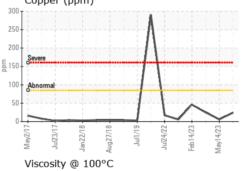
| VISUAL | | method | limit/base | current | history1 | history2 |
|------------------|--------|---------------|-------------|-------------|----------|----------|
| Emulsified Water | scalar | Visual* | >0.2 | NEG | NEG | NEG |
| Free Water | scalar | Visual* | | NEG | NEG | NEG |
| FLUID PROPE | DTIEC | method | limit/base | OLLEW O Int | historyd | hiotom/0 |
| FLUID PROPE | RIIES | method | iiiiii/base | current | history1 | history2 |
| Visc @ 100°C | cSt | ASTM D7279(m) | 12.00 | 11.3 | 11.3 | 11.0 |
| GRAPHS | | | | | | |
| | | | | | | |

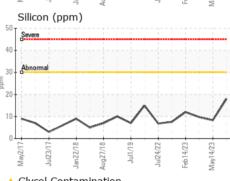
| Iror | n (ppr | n) | | | | | |
|---------|------------|----------|----------|---------------|----------|----------|----------|
| Sever | е | | | | | | |
| 50- | | | | | | | |
| Abno | rmal | | | | | - | |
| 00- | | | | | | | |
| 50 | \ | | ~/ | \ | | | \ |
| | \ / | | | | | / | |
| و ليا | | - | - | - | | | |
| May2/17 | Jul23/17 | Jan22/18 | Aug27/18 | Jul1/19 | Jul24/22 | Feb14/23 | May14/23 |
| Š | n | Jan | Aug | $\overline{}$ | 7 | 虚 | May |
| Alur | minur | n (pp | m) | | | | |

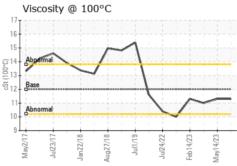


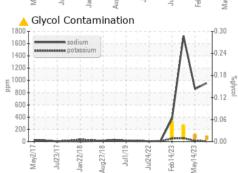














CALA ISO 17025:2017 Accredited

Report Id: GFL554 [WCAMIS] 02589503 (Generated: 10/17/2023 16:29:30) Rev: 1

Laboratory Sample No. Lab Number **Unique Number**

: WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 GFL Environmental - 554 - Edmonton SW : GFL0097641

Received : 02589503 Diagnosed

: 17 Oct 2023 : 17 Oct 2023 : Kevin Marson Diagnostician

: 5658569 Test Package : MOB 1 (Additional Tests: Glycol)

To discuss this sample report, contact Customer Service at 1-800-268-2131. Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab.

8409 -15th Street NW Edmonton, AB CA T6P 0B8 Contact: Antonio De Rosa

aderosa@gflenv.com T: (780)509-2640 F: (780)444-8851

Validity of results and interpretation are based on the sample and information as supplied.