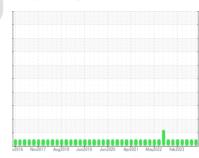


OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Machine Id 2632 Component

Diesel Engine

PETRO CANADA DURON SHP 15W40 (42 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.

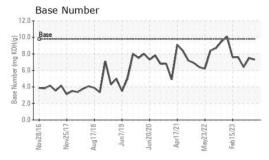
Fluid Condition

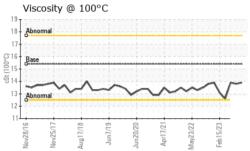
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

| Sample Number Client Info GFL0072027 GFL0072160 GFL0072061 | GAL) **2016 Nov2017 Aug2018 Jun2019 Jun2020 Ap2021 May2022 Feb2023 | | | | | | |
|--|---|----------|-------------|------------|-------------|-------------|-------------|
| Sample Date | SAMPLE INFOR | MATION | method | limit/base | current | history1 | history2 |
| Machine Age | Sample Number | | Client Info | | GFL0072027 | GFL0072160 | GFL0072061 |
| Oil Age hrs Client Info 600 600 593 Oil Changed Sample Status Client Info Changed Changed Changed Changed Changed Changed Changed NORMAL NO | Sample Date | | Client Info | | 12 Dec 2023 | 03 Oct 2023 | 11 Aug 2023 |
| Oil Changed Sample Status Client Info MoRMAL Changed NORMAL Changed NoE Change NoE Change NoE <t< td=""><td>Machine Age</td><td>hrs</td><td>Client Info</td><td></td><th>21309</th><td>20753</td><td>20231</td></t<> | Machine Age | hrs | Client Info | | 21309 | 20753 | 20231 |
| Sample Status method limit/base current history1 history2 Fuel WC Method >3.0 <1.0 | Oil Age | hrs | Client Info | | 600 | 600 | 593 |
| CONTAMINATION method limit/base current history1 history2 Fuel WC Method >3.0 <1.0 | Oil Changed | | Client Info | | Changed | Changed | Changed |
| Fuel | Sample Status | | | | NORMAL | NORMAL | NORMAL |
| Water Glycol WC Method >0.2 NEG NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >165 13 13 23 Chromium ppm ASTM D5185m >5 <1 | CONTAMINAT | ION | method | limit/base | current | history1 | history2 |
| Silycol WC Method NEG NEG NEG | Fuel | | WC Method | >3.0 | <1.0 | <1.0 | <1.0 |
| WEAR METALS | Water | | WC Method | >0.2 | NEG | NEG | NEG |
| Iron | Glycol | | WC Method | | NEG | NEG | NEG |
| Chromium ppm ASTM D5185m >5 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <td>WEAR METAL</td> <td>S</td> <td>method</td> <td>limit/base</td> <th>current</th> <td>history1</td> <td>history2</td> | WEAR METAL | S | method | limit/base | current | history1 | history2 |
| Nickel ppm ASTM D5185m 24 0 <1 0 Titanium ppm ASTM D5185m >2 0 0 0 Silver ppm ASTM D5185m >2 0 0 0 Aluminum ppm ASTM D5185m >20 2 2 3 Lead ppm ASTM D5185m >150 15 71 11 Copper ppm ASTM D5185m >90 3 12 20 Tin ppm ASTM D5185m >5 <1 | Iron | ppm | ASTM D5185m | >165 | 13 | 13 | 23 |
| Titanium ppm ASTM D5185m >2 0 0 0 Silver ppm ASTM D5185m >2 0 0 0 Aluminum ppm ASTM D5185m >20 2 2 3 Lead ppm ASTM D5185m >90 3 12 20 Tin ppm ASTM D5185m >90 3 12 20 Tin ppm ASTM D5185m >5 <1 | Chromium | ppm | ASTM D5185m | >5 | <1 | <1 | <1 |
| Silver | Nickel | ppm | ASTM D5185m | >4 | 0 | <1 | 0 |
| Aluminum | Titanium | ppm | ASTM D5185m | >2 | 0 | 0 | 0 |
| Lead | Silver | ppm | ASTM D5185m | >2 | 0 | 0 | 0 |
| Copper ppm ASTM D5185m >90 3 12 20 Tin ppm ASTM D5185m >5 <1 | Aluminum | ppm | ASTM D5185m | >20 | 2 | 2 | 3 |
| Tin ppm ASTM D5185m >5 <1 3 <1 Vanadium ppm ASTM D5185m <1 0 0 Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 3 5 6 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 0 0 0 1 Magnesium ppm ASTM D5185m 1010 971 923 909 Calcium ppm ASTM D5185m 1010 971 923 909 Calcium ppm ASTM D5185m 1070 1058 1089 1115 Phosphorus ppm ASTM D5185m 1270 1269 1279 1227 Sulfur ppm ASTM D5185m 2060 2992 28 | Lead | ppm | ASTM D5185m | >150 | 15 | 71 | 11 |
| Vanadium ppm ASTM D5185m <1 0 0 Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 3 5 6 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 0 0 0 1 Magnese ppm ASTM D5185m 0 0 0 1 1 Magnesium ppm ASTM D5185m 1010 971 923 909 Calcium ppm ASTM D5185m 1010 971 923 909 Calcium ppm ASTM D5185m 1070 1058 1089 1115 Phosphorus ppm ASTM D5185m 1270 1269 1279 1227 Sulfur ppm ASTM D5185m 2060 <td>Copper</td> <td>ppm</td> <td>ASTM D5185m</td> <td>>90</td> <th>3</th> <td>12</td> <td>20</td> | Copper | ppm | ASTM D5185m | >90 | 3 | 12 | 20 |
| Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 3 5 6 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 60 63 62 66 Manganese ppm ASTM D5185m 0 0 <1 <1 Magnesium ppm ASTM D5185m 1010 971 923 909 Calcium ppm ASTM D5185m 1070 1058 1089 1115 Phosphorus ppm ASTM D5185m 1270 1269 1279 1227 Sulfur ppm ASTM D5185m 2060 2992 2851 2765 CONTAMINANTS method limit/base current history1 history2 Silico | Tin | ppm | ASTM D5185m | >5 | <1 | 3 | <1 |
| ADDITIVES | Vanadium | ppm | ASTM D5185m | | <1 | 0 | 0 |
| Boron ppm ASTM D5185m 0 0 0 0 0 0 0 0 0 | Cadmium | ppm | ASTM D5185m | | 0 | 0 | 0 |
| Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 60 63 62 66 Manganese ppm ASTM D5185m 0 0 <1 | ADDITIVES | | method | limit/base | current | history1 | history2 |
| Molybdenum ppm ASTM D5185m 60 63 62 66 Manganese ppm ASTM D5185m 0 0 <1 <1 Magnesium ppm ASTM D5185m 1010 971 923 909 Calcium ppm ASTM D5185m 1070 1058 1089 1115 Phosphorus ppm ASTM D5185m 1150 903 1060 1021 Zinc ppm ASTM D5185m 1270 1269 1279 1227 Sulfur ppm ASTM D5185m 2060 2992 2851 2765 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >35 12 7 10 Sodium ppm ASTM D5185m >20 <1 2 3 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 | Boron | ppm | ASTM D5185m | 0 | 3 | 5 | 6 |
| Manganese ppm ASTM D5185m 0 0 <1 <1 Magnesium ppm ASTM D5185m 1010 971 923 909 Calcium ppm ASTM D5185m 1070 1058 1089 1115 Phosphorus ppm ASTM D5185m 1150 903 1060 1021 Zinc ppm ASTM D5185m 1270 1269 1279 1227 Sulfur ppm ASTM D5185m 2060 2992 2851 2765 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >35 12 7 10 Sodium ppm ASTM D5185m >20 <1 | Barium | ppm | ASTM D5185m | 0 | 0 | 0 | 0 |
| Magnesium ppm ASTM D5185m 1010 971 923 909 Calcium ppm ASTM D5185m 1070 1058 1089 1115 Phosphorus ppm ASTM D5185m 1150 903 1060 1021 Zinc ppm ASTM D5185m 1270 1269 1279 1227 Sulfur ppm ASTM D5185m 2060 2992 2851 2765 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >35 12 7 10 Sodium ppm ASTM D5185m >20 <1 | Molybdenum | ppm | ASTM D5185m | 60 | 63 | 62 | 66 |
| Calcium ppm ASTM D5185m 1070 1058 1089 1115 Phosphorus ppm ASTM D5185m 1150 903 1060 1021 Zinc ppm ASTM D5185m 1270 1269 1279 1227 Sulfur ppm ASTM D5185m 2060 2992 2851 2765 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >35 12 7 10 Sodium ppm ASTM D5185m >35 12 7 10 Sodium ppm ASTM D5185m >20 <1 | Manganese | ppm | ASTM D5185m | 0 | 0 | <1 | <1 |
| Phosphorus ppm ASTM D5185m 1150 903 1060 1021 Zinc ppm ASTM D5185m 1270 1269 1279 1227 Sulfur ppm ASTM D5185m 2060 2992 2851 2765 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >35 12 7 10 Sodium ppm ASTM D5185m >35 6 7 3 Potassium ppm ASTM D5185m >20 <1 | Magnesium | ppm | ASTM D5185m | 1010 | 971 | 923 | 909 |
| Zinc ppm ASTM D5185m 1270 1269 1279 1227 Sulfur ppm ASTM D5185m 2060 2992 2851 2765 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >35 12 7 10 Sodium ppm ASTM D5185m 6 7 3 Potassium ppm ASTM D5185m >20 <1 | Calcium | ppm | ASTM D5185m | 1070 | 1058 | 1089 | 1115 |
| Sulfur ppm ASTM D5185m 2060 2992 2851 2765 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >35 12 7 10 Sodium ppm ASTM D5185m 6 7 3 Potassium ppm ASTM D5185m >20 <1 | Phosphorus | ppm | ASTM D5185m | 1150 | 903 | 1060 | 1021 |
| CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >35 12 7 10 Sodium ppm ASTM D5185m 6 7 3 Potassium ppm ASTM D5185m >20 <1 | Zinc | ppm | ASTM D5185m | 1270 | 1269 | 1279 | 1227 |
| Silicon ppm ASTM D5185m >35 12 7 10 Sodium ppm ASTM D5185m 6 7 3 Potassium ppm ASTM D5185m >20 <1 2 3 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >7.5 0.5 0.5 0.8 Nitration Abs/cm *ASTM D7624 >20 10.6 10.4 11.2 Sulfation Abs/.1mm *ASTM D7415 >30 22.2 22.5 23.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 18.9 19.3 20.0 | Sulfur | ppm | ASTM D5185m | 2060 | 2992 | 2851 | 2765 |
| Sodium ppm ASTM D5185m 6 7 3 Potassium ppm ASTM D5185m >20 <1 2 3 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >7.5 0.5 0.5 0.8 Nitration Abs/cm *ASTM D7624 >20 10.6 10.4 11.2 Sulfation Abs/.1mm *ASTM D7415 >30 22.2 22.5 23.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 18.9 19.3 20.0 | CONTAMINAN | TS | method | limit/base | current | history1 | history2 |
| Potassium ppm ASTM D5185m >20 <1 2 3 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >7.5 0.5 0.5 0.8 Nitration Abs/cm *ASTM D7624 >20 10.6 10.4 11.2 Sulfation Abs/.1mm *ASTM D7415 >30 22.2 22.5 23.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 18.9 19.3 20.0 | Silicon | ppm | ASTM D5185m | >35 | 12 | 7 | 10 |
| INFRA-RED | Sodium | ppm | ASTM D5185m | | 6 | 7 | 3 |
| Soot % % *ASTM D7844 >7.5 0.5 0.5 0.8 Nitration Abs/cm *ASTM D7624 >20 10.6 10.4 11.2 Sulfation Abs/.1mm *ASTM D7415 >30 22.2 22.5 23.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 18.9 19.3 20.0 | Potassium | ppm | ASTM D5185m | >20 | <1 | 2 | 3 |
| Nitration Abs/cm *ASTM D7624 >20 10.6 10.4 11.2 Sulfation Abs/.1mm *ASTM D7415 >30 22.2 22.5 23.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 18.9 19.3 20.0 | INFRA-RED | | method | limit/base | current | history1 | history2 |
| Sulfation Abs/.1mm *ASTM D7415 >30 22.2 22.5 23.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 18.9 19.3 20.0 | Soot % | % | *ASTM D7844 | >7.5 | 0.5 | 0.5 | 0.8 |
| FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm Abs/. | Nitration | Abs/cm | *ASTM D7624 | >20 | 10.6 | 10.4 | 11.2 |
| Oxidation Abs/.1mm *ASTM D7414 >25 18.9 19.3 20.0 | Sulfation | Abs/.1mm | *ASTM D7415 | >30 | 22.2 | 22.5 | 23.3 |
| | FLUID DEGRAI | OITAC | method | limit/base | current | history1 | history2 |
| Base Number (BN) mg KOH/g ASTM D2896 9.8 7.3 7.5 6.4 | Oxidation | Abs/.1mm | *ASTM D7414 | >25 | 18.9 | 19.3 | 20.0 |
| | Base Number (BN) | mg KOH/g | ASTM D2896 | 9.8 | 7.3 | 7.5 | 6.4 |



OIL ANALYSIS REPORT

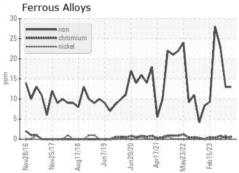


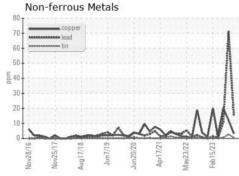


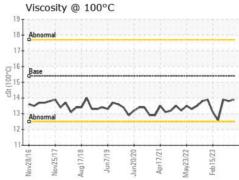
| VISUAL | | method | limit/base | current | history1 | history2 |
|-------------------------|--------|---------|------------|---------|----------|----------|
| White Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| Precipitate | 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 |

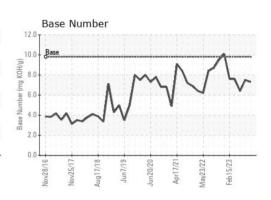
| FLUID PROPE | RTIES | method | | | | history2 |
|--------------|-------|-----------|------|------|------|----------|
| Visc @ 100°C | cSt | ASTM D445 | 15.4 | 13.9 | 13.8 | 13.9 |

GRAPHS













Certificate L2367

Laboratory

Sample No. Lab Number **Unique Number**

: GFL0072027 : 06039993 : 10795222 Test Package : FLEET

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Recieved : 19 Dec 2023 : 20 Dec 2023 Diagnosed

Diagnostician : Wes Davis

2097 Buchanan Highway Cedartown, GA US 30125 Contact: WILLIAM FOSTER

GFL Environmental - 094 - Cedartown

william.foster@gflenv.com T: (800)207-6618

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)