

OIL ANALYSIS REPORT

Sample Rating Trend





Machine Id 928100 Component Diesel Engine Fluid

PETRO CANADA DURON SHP 15W40 (--- 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

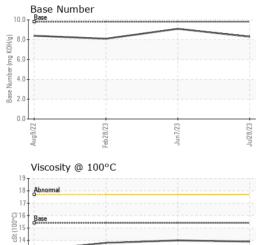
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

| SAMPLE INFORM | MATION | method | limit/base | current | history1 | history2 |
|--|--|---|---|--|---|---|
| Sample Number | | Client Info | | GFL0068307 | GFL0068292 | GFL0067228 |
| Sample Date | | Client Info | | 28 Jul 2023 | 07 Jun 2023 | 28 Feb 2023 |
| Machine Age | hrs | Client Info | | 16163 | 15021 | 15021 |
| Oil Age | hrs | Client Info | | 600 | 13205 | 650 |
| Oil Changed | | Client Info | | Changed | N/A | N/A |
| Sample Status | | | | NORMAL | NORMAL | NORMAL |
| CONTAMINAT | ION | method | limit/base | current | history1 | history2 |
| Fuel | | WC Method | >3.0 | <1.0 | <1.0 | <1.0 |
| Glycol | | WC Method | | NEG | NEG | NEG |
| WEAR METAL | S | method | limit/base | current | history1 | history2 |
| Iron | ppm | ASTM D5185m | >120 | 6 | 27 | 10 |
| Chromium | ppm | ASTM D5185m | >20 | <1 | <1 | <1 |
| Nickel | ppm | ASTM D5185m | >5 | 0 | 0 | 0 |
| Titanium | ppm | ASTM D5185m | | 0 | <1 | 0 |
| Silver | ppm | ASTM D5185m | >2 | 0 | 0 | <1 |
| Aluminum | ppm | ASTM D5185m | | 3 | 5 | 5 |
| Lead | ppm | ASTM D5185m | >40 | <1 | <1 | 0 |
| Copper | ppm | ASTM D5185m | | <1 | <1 | <1 |
| Tin | | | >15 | <1 | <1 | 0 |
| Vanadium | ppm | ASTM D5185m | >10 | 0 | 0 | 0 |
| Cadmium | | ASTM D5185m | | 0 | 0 | 0 |
| | ppm | | | | | |
| ADDITIVES | | method | limit/base | current | history1 | history2 |
| Boron | ppm | ASTM D5185m | 0 | 2 | 5 | 4 |
| Barium | ppm | ASTM D5185m | 0 | 0 | 0 | 0 |
| Molybdenum | 10 10 100 | | 00 | | | |
| | ppm | ASTM D5185m | 60 | 59 | 61 | 62 |
| Manganese | ppm | ASTM D5185m ASTM D5185m | | 59 0 | 61 <1 | 62 <1 |
| Manganese Magnesium | • | | | | | |
| - | ppm | ASTM D5185m ASTM D5185m | 0 | 0 | <1 | <1 |
| Magnesium | ppm ppm | ASTM D5185m ASTM D5185m | 0 1010 | 0 891 | <1 920 | <1 957 |
| Magnesium Calcium | ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 0 1010 1070 | 0 891 1082 | <1 920 1100 | <1 957 1137 |
| Magnesium Calcium Phosphorus | ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 0 1010 1070 1150 1270 | 0 891 1082 993 | <1 920 1100 1012 | <1 957 1137 1015 |
| Magnesium Calcium Phosphorus Zinc | ppm ppm ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 0 1010 1070 1150 1270 | 0 891 1082 993 1171 | <1 920 1100 1012 1229 | <1 957 1137 1015 1267 |
| Magnesium Calcium Phosphorus Zinc Sulfur | ppm ppm ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 0 1010 1070 1150 1270 2060 | 0 891 1082 993 1171 2915 | <1 920 1100 1012 1229 3470 | <1 957 1137 1015 1267 3599 |
| Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN | ppm ppm ppm ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 0 1010 1070 1150 1270 2060 | 0 891 1082 993 1171 2915 | <1 920 1100 1012 1229 3470 history1 | <1 957 1137 1015 1267 3599 history2 |
| Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon | ppm ppm ppm ppm ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m Method ASTM D5185m | 0 1010 1070 1150 1270 2060 | 0 891 1082 993 1171 2915 current | <1 920 1100 1012 1229 3470 history1 | <1 957 1137 1015 1267 3599 history2 |
| Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium | ppm ppm ppm ppm ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m Method ASTM D5185m ASTM D5185m | 0 1010 1070 1150 1270 2060 limit/base >25 | 0 891 1082 993 1171 2915 current 3 | <1 920 1100 1012 1229 3470 history1 22 2 | <1 957 1137 1015 1267 3599 history2 3 |
| Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium | ppm ppm ppm ppm ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m MEthod ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 0 1010 1070 1150 1270 2060 limit/base >25 >20 | 0 891 1082 993 1171 2915 current 3 0 | <1 920 1100 1012 1229 3470 history1 22 2 | <1 957 1137 1015 1267 3599 history2 3 2 <1 |
| Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED | ppm ppm ppm ppm ppm ppm ppm | ASTM D5185m | 0 1010 1070 1150 1270 2060 limit/base >25 >20 | 0 891 1082 993 1171 2915 current 3 0 1 | <1 920 1100 1012 1229 3470 history1 22 2 history1 | <1 957 1137 1015 1267 3599 history2 3 2 <1 history2 |
| Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % | ppm ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185m Method ASTM D5185m | 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base | 0 891 1082 993 1171 2915 current 3 0 1 current 0.7 | <1 920 1100 1012 1229 3470 history1 22 2 history1 0.3 | <1 957 1137 1015 1267 3599 history2 3 2 <1 history2 0.8 |
| 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 Method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D76145 | 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base | 0 891 1082 993 1171 2915 current 3 0 1 current 0.7 7.5 | <1 920 1100 1012 1229 3470 history1 22 2 2 history1 0.3 5.6 | <1 957 1137 1015 1267 3599 history2 3 2 <1 history2 0.8 8.7 |
| 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 Method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D76145 | 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >4 >20 >30 | 0 891 1082 993 1171 2915 current 3 0 1 current 0.7 7.5 18.6 | <1 920 1100 1012 1229 3470 history1 22 2 history1 0.3 5.6 18.7 | <1 957 1137 1015 1267 3599 history2 3 2 <1 history2 0.8 8.7 19.3 |
| Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAD | ppm | ASTM D5185m Method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m Method *ASTM D7844 *ASTM D7624 *ASTM D7415 Method | 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >4 >20 >30 limit/base | 0 891 1082 993 1171 2915 current 3 0 1 current 0.7 7.5 18.6 | <1 920 1100 1012 1229 3470 history1 22 2 history1 0.3 5.6 18.7 history1 | <1 957 1137 1015 1267 3599 history2 3 2 <1 history2 0.8 8.7 19.3 history2 |



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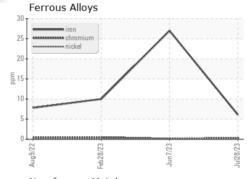
OIL ANALYSIS REPORT

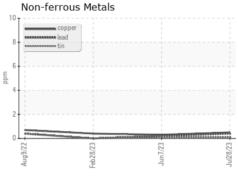


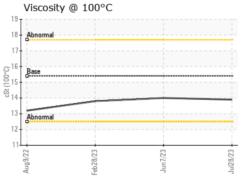
| VISUAL | | method | limit/base | current | history1 | history2 |
|-------------------------|--------|---------|------------|---------|----------|----------|
| White Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| Precipitate |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

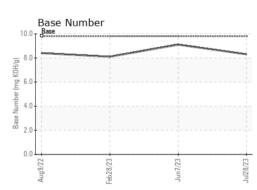
| FLUID PROPI | EKIIES | metnoa | ilmit/base | current | nistory i | nistory2 |
|--------------|--------|-----------|------------|---------|-----------|----------|
| Visc @ 100°C | cSt | ASTM D445 | 15.4 | 13.9 | 14.0 | 13.8 |

GRAPHS













Certificate L2367

Laboratory Sample No. Lab Number Unique Number : 10604632 Test Package : FLEET

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : GFL0068307 : 05924685

Received Diagnosed

: 15 Aug 2023 : 15 Aug 2023 Diagnostician : Wes Davis

GFL Environmental - 419 - Metro Saginaw

6950 N Michigan Saginaw, MI US 48604 Contact: Jeremy Hines

jhines@gflenv.com T: (800)684-1277

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)

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