

OIL ANALYSIS REPORT

Sample Rating Trend

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Machine Id 929089-205312

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.

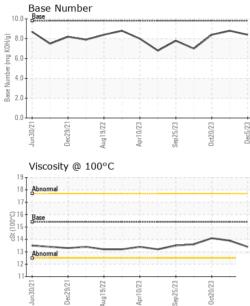
Fluid Condition

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

| JAL) | | Jun2021 | Dec2021 Aug2022 | Apr2023 Sep2023 Oct2023 | Dec2023 | |
|-------------------------------|----------------------|-------------|-----------------|-------------------------|-------------|-------------|
| SAMPLE INFOR | MATION | method | limit/base | current | history1 | history2 |
| Sample Number | | Client Info | | GFL0093605 | GFL0093532 | GFL0077242 |
| Sample Date | | Client Info | | 05 Dec 2023 | 08 Nov 2023 | 20 Oct 2023 |
| Machine Age | hrs | Client Info | | 22693 | 22517 | 22381 |
| Oil Age | hrs | Client Info | | 312 | 136 | 668 |
| Oil Changed | | Client Info | | Not Changd | Not Changd | Changed |
| Sample Status | | | | NORMAL | NORMAL | ABNORMAL |
| CONTAMINAT | ION | method | limit/base | current | history1 | history2 |
| Fuel | | WC Method | >5 | <1.0 | <1.0 | <1.0 |
| Water | | WC Method | >0.2 | NEG | NEG | NEG |
| Glycol | | WC Method | | NEG | NEG | NEG |
| WEAR METAL | .S | method | limit/base | current | history1 | history2 |
| Iron | ppm | ASTM D5185m | >100 | 8 | 9 | 5 |
| Chromium | ppm | ASTM D5185m | >20 | <1 | 0 | <1 |
| Nickel | ppm | ASTM D5185m | >4 | 0 | 0 | <1 |
| Titanium | ppm | ASTM D5185m | | 6 | 0 | 1 |
| Silver | ppm | ASTM D5185m | >3 | 0 | 0 | <1 |
| Aluminum | ppm | ASTM D5185m | >20 | 4 | <1 | 3 |
| Lead | ppm | ASTM D5185m | >40 | 1 | 0 | 2 |
| Copper | ppm | ASTM D5185m | >330 | 3 | 2 | 10 |
| Tin | ppm | ASTM D5185m | >15 | 0 | 0 | <1 |
| Vanadium | ppm | ASTM D5185m | | 0 | 0 | 0 |
| Cadmium | ppm | ASTM D5185m | | 0 | 0 | <1 |
| ADDITIVES | | method | limit/base | current | history1 | history2 |
| Boron | ppm | ASTM D5185m | 0 | 8 | 0 | <1 |
| Barium | ppm | ASTM D5185m | 0 | 2 | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | 60 | 58 | 62 | 54 |
| Manganese | ppm | ASTM D5185m | 0 | 0 | 0 | <1 |
| Magnesium | ppm | ASTM D5185m | 1010 | 887 | 1058 | 951 |
| Calcium | ppm | ASTM D5185m | 1070 | 1109 | 1175 | 977 |
| Phosphorus | ppm | ASTM D5185m | 1150 | 931 | 1153 | 908 |
| Zinc | ppm | ASTM D5185m | 1270 | 1174 | 1400 | 1193 |
| Sulfur | ppm | ASTM D5185m | 2060 | 3253 | 3461 | 2813 |
| CONTAMINAN | ITS | method | limit/base | current | history1 | history2 |
| Silicon | ppm | ASTM D5185m | >25 | 10 | 4 | 8 |
| Sodium | ppm | ASTM D5185m | | 2 | 3 | 6 |
| Potassium | ppm | ASTM D5185m | >20 | 3 | <1 | 4 |
| INFRA-RED | | method | limit/base | current | history1 | history2 |
| Soot % | % | *ASTM D7844 | >3 | 0.2 | 0.2 | 0.2 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | 7.1 | 5.9 | 5.6 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | 19.1 | 18.3 | 17.8 |
| FLUID DEGRAI | DATION | method | limit/base | current | history1 | history2 |
| | | **** | 05 | | | 10 5 |
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | 14.9 | 14.1 | 13.5 |
| Oxidation Base Number (BN) | Abs/.1mm mg KOH/g | | >25 9.8 | 14.9 8.4 | 14.1 8.8 | 8.4 |



OIL ANALYSIS REPORT



| | VISUA | ۸L | | me | ethod | limit/base | curi | rent | history1 | l | history2 |
|-------------|---|-----------------------|---------------------|-----------|----------|---|---------|--------|--|-----------|----------|
| - | White Me | tal | scala | ar *Visi | ual | NONE | NON | E | NONE | ľ | NONE |
| | Yellow M | etal | scala | ar *Visi | ual | NONE | NON | Ε | NONE | 1 | NONE |
| | Precipitat | e | scala | ar *Visi | ual | NONE | NON | E | NONE | ľ | NONE |
| | Silt | | scala | ar *Visi | ual | NONE | NON | Ε | NONE | ľ | NONE |
| | Debris | | scala | ar *Visi | ual | NONE | NON | E | NONE | 🔺 N | MODER |
| _ | Sand/Dirt | | scala | ar *Visi | ual | NONE | NON | E | NONE | 1 | NONE |
| Dec5/23 | Appearar | nce | scala | ar *Visi | ual | NORML | NORI | ML | NORML | 1 | NORML |
| De | Odor | | scala | ar *Visi | ual | NORML | NORI | ML | NORML | 1 | NORML |
| | Emulsifie | d Wate | r scala | ar *Visi | ual | >0.2 | NEG | | NEG | 1 | NEG |
| | Free Wat | er | scala | ar *Vis | ual | | NEG | | NEG | 1 | NEG |
| | FLUID | PRO | PERTIE | S me | ethod | limit/base | curi | rent | history1 | 1 | history2 |
| | Visc @ 1 | 00°C | cSt | AST | M D445 | 15.4 | 13.4 | | 13.9 | 1 | 14.1 |
| / | GRAP | | | | | | | | | | |
| | Ferrous | Alloys | | | | | | | | | |
| | 1 | iron chromium | | | | | | | | | |
| | ********* | nickel | | | | | | | | | |
| | 20 | / | | | | | | | | | |
| bhu | 15 | | | \sim | | | | | | | |
| | 10 | | \sim | | | | | | | | |
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| | 5 | a state as a | | | V | | | | | | |
| | 0 | 7 | 22 | 23 | Z3 | 23 | | | | | |
| | 0 | Jecc/a// | ug 19/22 | ep25/23 | Dct20/23 | Dec5/23 | | | | | |
| | Jun30/21 | | Aprilo/23 | Sep25/23 | 0ct20/23 | Dec5/23 | | | | | |
| | 0 | | | Sep25/23 | 0ct20/23 | Dec5/23 | | | | | |
| | Non-fer | rous M | | Sep25/23 | Oct20/23 | Dec5/23 | | | | | |
| | Non-fer | rous M | | Sep25/23 | 0et20/23 | Dec5/23 | | | | | |
| | 0 1200 Non-fer 50 40 | copper lead | | Sep25/23 | 0ct20/23 | Det5/23 | | | | | |
| bpm | 0 12000 Non-fer 50 40 30 | copper lead | | Sep25/23 | Oct20/23 | Dec5/23 | | | | | |
| bpm | 0 1200 Non-fer 50 40 | copper lead | | Sep.25/23 | 0et20123 | Dec5/23 | | | | | |
| mqq | 0 12000 Non-fer 50 40 30 | copper lead | | Sep 25/23 | 0et20/23 | Dec5/23 | | | | | |
| mqq | 0 10 10 10 10 10 10 10 10 10 10 10 10 10 | copper lead | | Sep25/23 | 0012023 | Dec5/23 | | | | | |
| mqq | 0 12/06 10 10 0 10 0 10 0 10 10 10 1 | copper lead tin | letals | J | | | | | | | |
| mqq | 0 12/06 10 10 0 10 0 10 0 10 10 10 1 | copper lead tin | letals | J | | | | | | | |
| mqq | 0 10 10 10 10 10 10 10 10 10 1 | rous M | letals | 25/5/dag | 0et2023 | Dec5/23 | | | | | |
| wdd | 0 12/06 10 10 0 10 0 10 0 10 10 10 1 | rous M | letals | J | | Dec5/23 | Base N | lumbei | r | | |
| mqq | Non-fer 10 10 10 10 10 10 10 10 10 10 | rous M | letals | J | | Dec5/23 | Base No | lumbei | r | | |
| uudd | 0 10 10 10 10 10 10 10 10 10 1 | rous M | letals | J | | Dec2/53 | | lumber | r | | |
| udd | 0 10 10 10 10 10 10 10 10 10 1 | rous M | letals | J | | Dec2/53 | | lumber | r | | |
| udd | 0 10 10 10 10 10 10 10 10 10 1 | rous M | letals | J | | Dec2/53 | | lumber | r | | |
| uudd | 0 10 10 10 10 10 10 10 10 10 1 | rous M | letals | J | | Dec2/53 | | lumber | r | | |
| cst (100°C) | 0 10 10 10 10 10 10 10 10 10 1 | rous M | letals | J | | 10.0 Bec5/23 10.0 H 9 H 10 H 10 H 10 H 10 H 10 H 10 H 10 H 10 | | lumber | r | | |
| cst (100°C) | Non-fer Non-fer Viscosit 19 Non-fer Viscosit 19 Base 15 14 | rous M | letals | J | | 1.0.1 1.0 (June Konk(d) 1.0 (June Konk(d) | | lumber | | | |
| cst (100°C) | Non-fer Non-fer Viscosit 19 Abnomal 12 14 15 14 15 14 15 14 15 14 15 14 15 15 14 15 15 16 17 17 17 17 17 17 17 17 17 17 | y @ 10 | 22061 Biny DO°°C | Sap25/23 | Oct20/23 | 10.1 Berc2/23 Base Number (mg K0H(d) 2.1 | | ~ | \frown | | |
| cst (100°C) | Non-fer Non-fer Viscosit 19 Abnomal 12 14 15 14 15 14 15 14 15 14 15 14 15 15 14 15 15 16 17 17 17 17 17 17 17 17 17 17 | y @ 10 | letals | J | | 10.1 Base Number (mg KDH/g) 5.1 Base Number (mg KDH/g) 5.1 | | Jumber | Aug19/22 Aug10/23 Apr10/23 Apr10/23 Apr10/23 Apr10/23 Apr10/23 Apr10/24 Apr | Sep 25/23 | 0et20/23 |



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: GFL0093605

: 06026096

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

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

Diagnostician : Wes Davis

Received

Diagnosed

: 06 Dec 2023

: 07 Dec 2023

Certificate L2367

Laboratory

Sample No.

Lab Number

Unique Number : 10775887

Test Package : FLEET