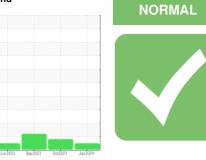


OIL ANALYSIS REPORT

SAMPLE INFORMATION method

Sample Rating Trend



Machine Id 420036

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

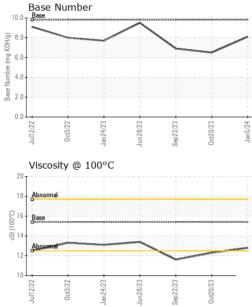
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

| SAMPLE INFORM | | method | limit/base | current | history1 | history2 |
|---|---|--|---|---|---|---|
| Sample Number | | Client Info | | GFL0097484 | GFL0097515 | GFL0092891 |
| Sample Date | | Client Info | | 05 Jan 2024 | 20 Oct 2023 | 22 Sep 2023 |
| Machine Age | hrs | Client Info | | 7810 | 7483 | 7332 |
| Oil Age | hrs | Client Info | | 5891 | 5891 | 5891 |
| Oil Changed | | Client Info | | N/A | N/A | N/A |
| Sample Status | | | | NORMAL | MARGINAL | ABNORMAL |
| - | | | | | | |
| CONTAMINAT | ION | method | limit/base | current | history1 | history2 |
| Fuel | | WC Method | >5 | <1.0 | 3 .0 | A 3.5 |
| 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 | 11 | 27 | 14 |
| Chromium | ppm | ASTM D5185m | >20 | 0 | 1 | 1 |
| Nickel | | ASTM D5185m | >4 | 0 | <1 | <1 |
| | ppm | | >4 | 0 | | 0 |
| Titanium Silver | ppm | ASTM D5185m | . 0 | | <1 0 | 0 |
| | ppm | ASTM D5185m | >3 | 0 | | |
| Aluminum | ppm | ASTM D5185m | >20 | <1 | 5 | <1 |
| Lead | ppm | ASTM D5185m | >40 | <1 | <1 | 1 |
| Copper | ppm | | >330 | 0 | <1 | 8 |
| Tin | ppm | ASTM D5185m | >15 | 0 | <1 | <1 |
| Vanadium | ppm | ASTM D5185m | | 0 | <1 | 0 |
| Cadmium | ppm | ASTM D5185m | | 0 | <1 | 0 |
| | | | | | | |
| ADDITIVES | | method | limit/base | current | history1 | history2 |
| ADDITIVES Boron | ppm | method ASTM D5185m | limit/base 0 | current 7 | history1 10 | history2 7 |
| | ppm ppm | | | | | |
| Boron | | ASTM D5185m | 0 | 7 | 10 | 7 |
| Boron Barium | ppm | ASTM D5185m ASTM D5185m ASTM D5185m | 0 | 7 0 | 10 <1 | 7 0 |
| Boron Barium Molybdenum | ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m | 0 0 60 | 7 0 56 | 10 <1 60 | 7 0 62 |
| Boron Barium Molybdenum Manganese | ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 0 0 60 0 | 7 0 56 0 | 10 <1 60 <1 | 7 0 62 <1 |
| Boron Barium Molybdenum Manganese Magnesium | ppm ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 0 0 60 0 1010 | 7 0 56 0 901 | 10 <1 60 <1 892 | 7 0 62 <1 900 |
| Boron Barium Molybdenum Manganese Magnesium Calcium | ppm ppm ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 0 0 60 0 1010 1070 | 7 0 56 0 901 1028 | 10 <1 60 <1 892 1108 | 7 0 62 <1 900 1069 |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus | ppm ppm ppm ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 0 0 60 0 1010 1070 1150 | 7 0 56 0 901 1028 925 | 10 <1 60 <1 892 1108 980 | 7 0 62 <1 900 1069 1042 |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc | ppm ppm ppm ppm ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 0 0 60 0 1010 1070 1150 1270 | 7 0 56 0 901 1028 925 1239 | 10 <1 60 <1 892 1108 980 1218 | 7 0 62 <1 900 1069 1042 1259 |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur | ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 0 0 60 0 1010 1070 1150 1270 2060 | 7 0 56 0 901 1028 925 1239 2870 | 10 <1 60 <1 892 1108 980 1218 3603 | 7 0 62 <1 900 1069 1042 1259 3021 |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon | ppm ppm ppm ppm ppm ppm ppm ppm TS | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method | 0 0 60 0 1010 1070 1150 1270 2060 | 7 0 56 0 901 1028 925 1239 2870 current 2 | 10 <1 60 <1 892 1108 980 1218 3603 history1 4 | 7 0 62 <1 900 1069 1042 1259 3021 history2 3 |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium | ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 | 7 0 56 0 901 1028 925 1239 2870 current | 10 <1 60 <1 892 1108 980 1218 3603 history1 | 7 0 62 <1 900 1069 1042 1259 3021 history2 |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium | ppm ppm ppm ppm ppm ppm ppm ppm TS | ASTM D5185m ASTM D5185m | 0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 | 7 0 56 0 901 1028 925 1239 2870 current 2 2 2 2 | 10 <1 60 <1 892 1108 980 1218 3603 history1 4 5 9 | 7 0 62 <1 900 1069 1042 1259 3021 history2 3 3 1 |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED | ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185m ASTM D5185m | 0 0 0 1010 1070 1150 1270 2060 2060 225 >20 20 | 7 0 56 0 901 1028 925 1239 2870 current 2 2 2 2 2 2 2 | 10 <1 60 <1 892 1108 980 1218 3603 history1 4 5 9 9 | 7 0 62 <1 900 1069 1042 1259 3021 history2 3 3 1 history2 |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % | ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185m ASTM D5185m | 0 0 0 1010 1070 1150 1270 2060 2060 225 >25 >20 limit/base >3 | 7 0 56 0 901 1028 925 1239 2870 current 2 2 2 2 2 2 2 2 2 2 2 2 2 2 | 10 <1 60 <1 892 1108 980 1218 3603 history1 4 5 9 history1 0.3 | 7 0 62 <1 900 1069 1042 1259 3021 history2 3 3 1 history2 0.2 |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration | ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm ppm | ASTM D5185m ASTM D5185m | 0 0 0 1010 1070 1150 1270 2060 2060 225 220 220 220 20 20 20 20 20 20 20 20 20 | 7 0 56 0 901 1028 925 1239 2870 current 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 | 10 <1 60 <1 892 1108 980 1218 3603 history1 4 5 9 history1 0.3 9.8 | 7 0 62 <1 900 1069 1042 1259 3021 history2 3 3 3 1 history2 0.2 9.7 |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % | ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185m ASTM D5185m | 0 0 0 1010 1070 1150 1270 2060 2060 225 >25 >20 limit/base >3 | 7 0 56 0 901 1028 925 1239 2870 current 2 2 2 2 2 2 2 2 2 2 2 2 2 2 | 10 <1 60 <1 892 1108 980 1218 3603 history1 4 5 9 history1 0.3 | 7 0 62 <1 900 1069 1042 1259 3021 history2 3 3 1 history2 0.2 |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration | ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm ppm ppm | ASTM D5185m ASTM D5185m | 0 0 0 1010 1070 1150 1270 2060 2060 225 220 220 220 20 20 20 20 20 20 20 20 20 | 7 0 56 0 901 1028 925 1239 2870 current 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 | 10 <1 60 <1 892 1108 980 1218 3603 history1 4 5 9 history1 0.3 9.8 | 7 0 62 <1 900 1069 1042 1259 3021 history2 3 3 3 1 history2 0.2 9.7 |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation | ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm ppm ppm | ASTM D5185m ASTM D5185m | 0 0 0 1010 1070 1150 1270 2060 2060 225 20 225 20 320 320 20 33 20 | 7 0 56 0 901 1028 925 1239 2870 current 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 | 10 <1 60 <1 892 1108 980 1218 3603 history1 4 5 9 9 history1 0.3 9.8 20.3 | 7 0 62 <1 900 1069 1042 1259 3021 history2 3 3 1 history2 0.2 9.7 20.2 |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation | ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7414 | 0 0 0 1010 1070 1150 1270 2060 2060 225 20 220 220 20 30 20 30 20 30 25 20 | 7 0 56 0 901 1028 925 1239 2870 current 2 2 2 2 2 2 current 0.2 7.5 18.7 | 10 <1 60 <1 892 1108 980 1218 3603 history1 4 5 9 history1 0.3 9.8 20.3 history1 | 7 0 62 <1 900 1069 1042 1259 3021 history2 3 3 3 1 history2 0.2 9.7 20.2 history2 |



OIL ANALYSIS REPORT

VISUAL



| | | | White Metal Yellow Metal Precipitate Silt Debris Sand/Dirt | scalar scalar scalar scalar scalar scalar scalar | *Visual *Visual *Visual *Visual *Visual | NONE NONE NONE NONE NONE | NONE NONE NONE NONE NONE NONE | NONE NONE NONE NONE NONE | NONE NONE NONE NONE NONE | | |
|---------|---------------------|----------------------------|--|---|--|--|--|---|--------------------------------------|---------|--|
| °C | Jun28/23 + | Sep 2 2/23 - Oct20/23 - | Appearance Odor Emulsified Water | scalar scalar scalar | *Visual *Visual *Visual | NORML NORML >0.2 | NORML NORML NEG | NORML NORML NEG | NORM NORM NEG | 1L | |
| | | | Free Water | scalar | *Visual | | NEG | NEG | NEG | | |
| | | | | | method | limit/bas | | history1 | histor | ry2 | |
| | | | Visc @ 100°C | cSt | ASTM D445 | 15.4 | 12.8 | 12.3 | ▲ 11.6 | | |
| | | | Ferrous Alloys | | | | | | | | |
| | Jun20/23 | Sep22/23 + 0ct20/23 + | 25 20 wdd 15 0 27 20 20 20 20 20 20 20 20 20 20 20 20 20 | Jun 28/23 | Sep 22/23 | Jan5,24 | | | | | |
| | | | Non-ferrous Meta | | Sep | | | | | | |
| | | | 2 0 2ZZZIInf Viscosity @ 100° | Jun28/23 | Sep22/23 | Jan5/24 | Base Number | | | | |
| | | | 19 18 Abnormal 17 16 000015 14 13 12 11 14 | _ | | Base Number (mg KOH/g) | 10.0 Base | | | | |
| | | | Jult2/22 Jult2/22 Jan24/23 | Jun28/23 | Sep 22/23 | Jan5/24 🗕 | Jult2/22 | Jun28/23 | Sep 22/23 0ct20/23 | Jan5/24 | |
| * - Dei | cuss th notes te | est methods that | e : FLEET , contact Customer Serv are outside of the ISO | 501 Madia Recieved Diagnose Diagnose vice at 1-8 17025 sco | son Ave., Ca d : 11, ed : 12, ician : We 00-237-1365 pe of accrea | Jan 2024 Jan 2024 s Davis D. Jitation. | 1 | 3 GFL Environmental - 641 - Alpena 1241 KING SETTLEMENT RD ALPENA, MI US 49707 Contact: DYLAN TOLAN dylan.tolan@gflenv.com T: (989)854-7203 JCGM 106:2012) F: | | | |

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Submitted By: GFL463 and GFL641 - DYLAN TOLAN