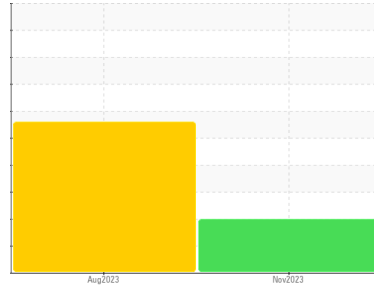




PROBLEM SUMMARY

Sample Rating Trend



WATER

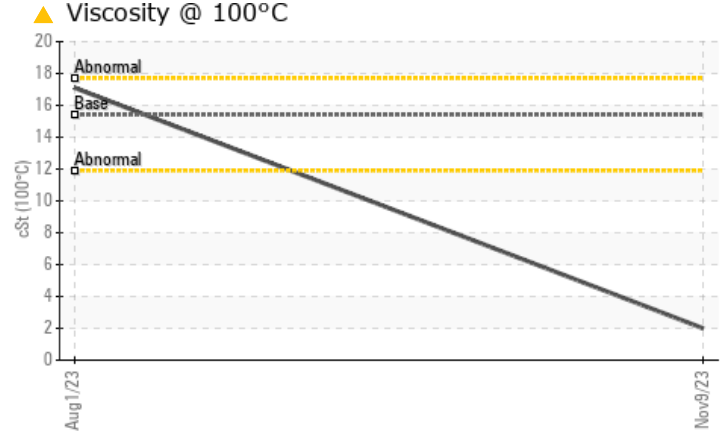
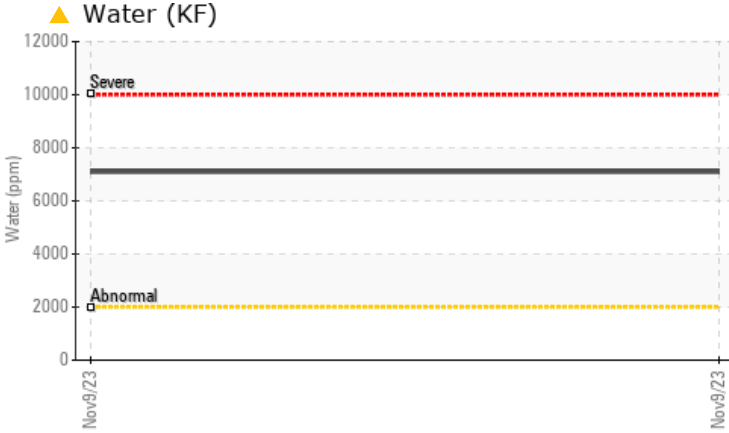


Machine Id
828054

Component
Diesel Engine

Fluid
PETRO CANADA DURON SHP 15W40 (--- GAL)

COMPONENT CONDITION SUMMARY



RECOMMENDATION

We advise that you check for the source of water entry. We recommend an early resample to monitor this condition. Please note that there was too much water present in the oil to perform a viscosity test.

PROBLEMATIC TEST RESULTS

| Sample Status | | | | ABNORMAL | SEVERE | --- |
|---------------|-----|------------|-------|-----------------|--------|-----|
| Water | % | ASTM D6304 | >0.2 | ▲ 0.710 | --- | --- |
| ppm Water | ppm | ASTM D6304 | >2000 | ▲ 7100 | --- | --- |
| Visc @ 100°C | cSt | ASTM D445 | 15.4 | ▲ 2 | ▲ 17.1 | --- |

Customer Id: GFL846
Sample No.: GFL0101125
Lab Number: 06008040
Test Package: FLEET



To manage this report scan the QR code

To discuss the diagnosis or test data:
Jonathan Hester +1 919-379-4092 x4092
jhester@wearcheckusa.com

To change component or sample information:
Customer Service +1 1-800-237-1369
customerservice@wearcheck.com

RECOMMENDED ACTIONS

| Action | Status | Date | Done By | Description |
|--------------------|--------|------|---------|-------------------------------------------------------------------------------------------|
| Resample | --- | --- | ? | We recommend an early resample to monitor this condition. |
| Alert | --- | --- | ? | Please note that there was too much water present in the oil to perform a viscosity test. |
| Check Water Access | --- | --- | ? | We advise that you check for the source of water entry. |

HISTORICAL DIAGNOSIS

01 Aug 2023 Diag: Jonathan Hester

SOOT



We advise that you check for the source of the coolant leak. Check for low coolant level. We advise that you check for faulty combustion, plugged air filters, or aftercoolers. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition. NOTE: High solids (carbon/soot) in the sample have limited the accuracy of Infra-Red data including Total Base Number (TBN) value. Cylinder, crank, or cam shaft wear is indicated. Sodium and/or potassium levels are high. There is an abnormal amount of solids and carbon present in the oil. The oil viscosity is higher than normal. The BN level is low.

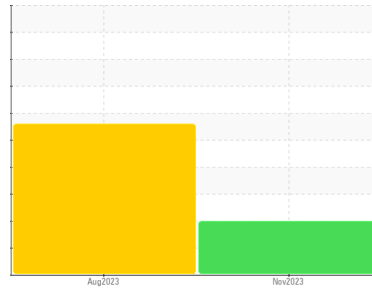
view report





OIL ANALYSIS REPORT

Sample Rating Trend



WATER



Machine Id
828054

Component
Diesel Engine

Fluid
PETRO CANADA DURON SHP 15W40 (--- GAL)

DIAGNOSIS

Recommendation

We advise that you check for the source of water entry. We recommend an early resample to monitor this condition. Please note that there was too much water present in the oil to perform a viscosity test.

Wear

All component wear rates are normal.

Contamination

Fuel content negligible. There is a moderate concentration of water present in the oil.

Fluid Condition

The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil.

SAMPLE INFORMATION

| method | limit/base | current | history1 | history2 |
|---------------|-------------|--------------------|-------------|----------|
| Sample Number | Client Info | GFL0101125 | GFL0087042 | --- |
| Sample Date | Client Info | 09 Nov 2023 | 01 Aug 2023 | --- |
| Machine Age | Client Info | 150 | 0 | --- |
| Oil Age | Client Info | 600 | 0 | --- |
| Oil Changed | Client Info | Not Changed | Changed | --- |
| Sample Status | | ABNORMAL | SEVERE | --- |

WEAR METALS

| method | limit/base | current | history1 | history2 |
|--------------------------|------------|--------------|----------|----------|
| Iron ppm ASTM D5185m | >100 | 17 | ▲ 139 | --- |
| Chromium ppm ASTM D5185m | >20 | <1 | 3 | --- |
| Nickel ppm ASTM D5185m | >4 | <1 | <1 | --- |
| Titanium ppm ASTM D5185m | | <1 | 0 | --- |
| Silver ppm ASTM D5185m | >3 | <1 | 0 | --- |
| Aluminum ppm ASTM D5185m | >20 | 3 | 4 | --- |
| Lead ppm ASTM D5185m | >40 | 18 | 5 | --- |
| Copper ppm ASTM D5185m | >330 | 5 | 2 | --- |
| Tin ppm ASTM D5185m | >15 | <1 | 1 | --- |
| Vanadium ppm ASTM D5185m | | <1 | 0 | --- |
| Cadmium ppm ASTM D5185m | | <1 | 0 | --- |

ADDITIVES

| method | limit/base | current | history1 | history2 |
|----------------------------|------------|--------------|----------|----------|
| Boron ppm ASTM D5185m | 0 | 11 | 13 | --- |
| Barium ppm ASTM D5185m | 0 | 0 | 0 | --- |
| Molybdenum ppm ASTM D5185m | 60 | 67 | 82 | --- |
| Manganese ppm ASTM D5185m | 0 | <1 | 2 | --- |
| Magnesium ppm ASTM D5185m | 1010 | 808 | 923 | --- |
| Calcium ppm ASTM D5185m | 1070 | 1085 | 1136 | --- |
| Phosphorus ppm ASTM D5185m | 1150 | 972 | 1021 | --- |
| Zinc ppm ASTM D5185m | 1270 | 1134 | 1280 | --- |
| Sulfur ppm ASTM D5185m | 2060 | 3137 | 3689 | --- |

CONTAMINANTS

| method | limit/base | current | history1 | history2 |
|---------------------------|------------|----------------|----------|----------|
| Silicon ppm ASTM D5185m | >25 | 6 | 18 | --- |
| Sodium ppm ASTM D5185m | | 258 | ▲ 746 | --- |
| Potassium ppm ASTM D5185m | >20 | 8 | 13 | --- |
| Fuel % ASTM D3524 | >5 | 0.1 | <1.0 | --- |
| Water % ASTM D6304 | >0.2 | ▲ 0.710 | --- | --- |
| ppm Water ppm ASTM D6304 | >2000 | ▲ 7100 | --- | --- |
| Glycol % *ASTM D2982 | | 0.0 | NEG | --- |

INFRA-RED

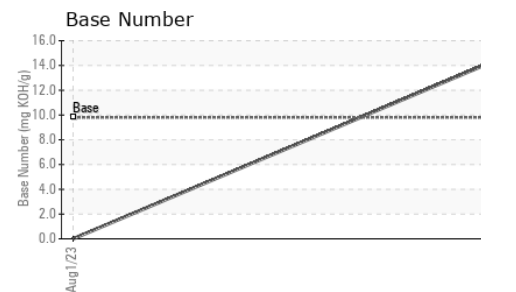
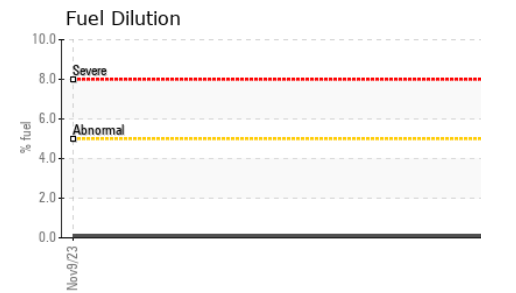
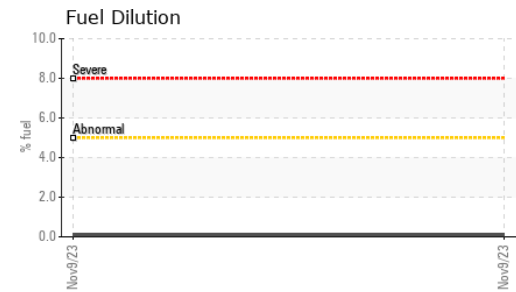
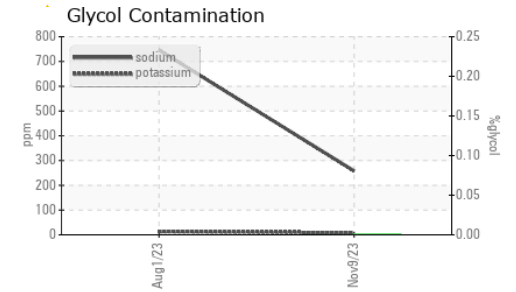
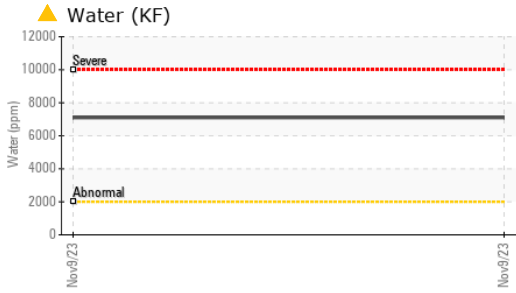
| method | limit/base | current | history1 | history2 |
|--------------------------------|------------|-------------|----------|----------|
| Soot % *ASTM D7844 | >3 | 0.1 | ◆ 6.7 | --- |
| Nitration Abs/cm *ASTM D7624 | >20 | 7.6 | 15.2 | --- |
| Sulfation Abs/.1mm *ASTM D7415 | >30 | 14.9 | 31.7 | --- |

FLUID DEGRADATION

| method | limit/base | current | history1 | history2 |
|--------------------------------------|------------|-------------|----------|----------|
| Oxidation Abs/.1mm *ASTM D7414 | >25 | 13.7 | 16.9 | --- |
| Base Number (BN) mg KOH/g ASTM D2896 | 9.8 | 14.7 | ▲ 0.0 | --- |



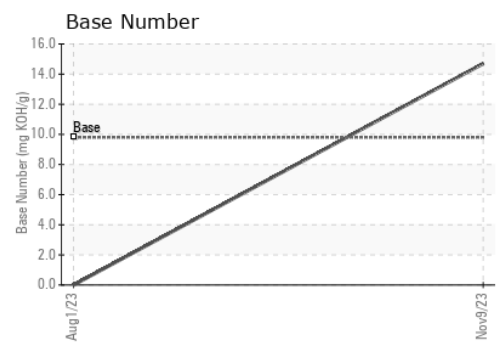
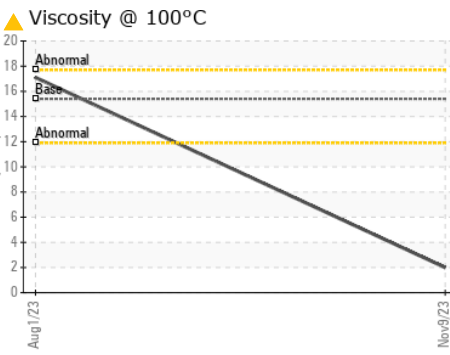
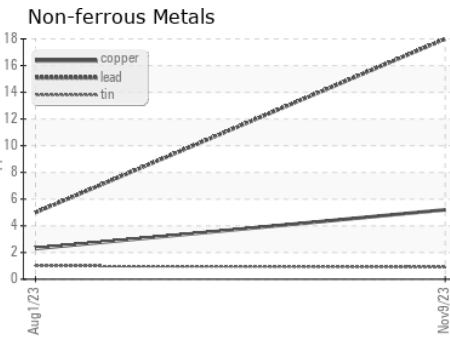
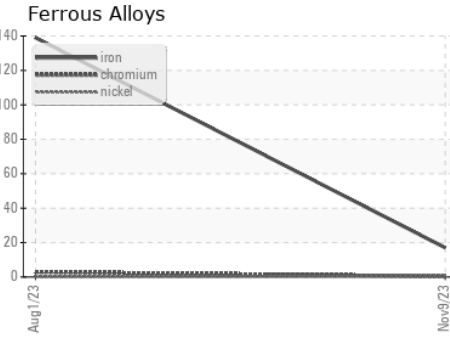
OIL ANALYSIS REPORT



| VISUAL | method | limit/base | current | history1 | history2 |
|------------------|--------|------------|---------|----------|----------|
| White Metal | scalar | *Visual | NONE | NONE | --- |
| Yellow Metal | scalar | *Visual | NONE | NONE | --- |
| Precipitate | scalar | *Visual | NONE | NONE | --- |
| Silt | scalar | *Visual | NONE | NONE | --- |
| Debris | scalar | *Visual | NONE | NONE | --- |
| Sand/Dirt | scalar | *Visual | NONE | NONE | --- |
| Appearance | scalar | *Visual | NORML | NORML | --- |
| Odor | scalar | *Visual | NORML | NORML | --- |
| Emulsified Water | scalar | *Visual | >0.2 | NEG | --- |
| Free Water | scalar | *Visual | | NEG | --- |

| FLUID PROPERTIES | method | limit/base | current | history1 | history2 |
|------------------|--------|------------|---------|----------|----------|
| Visc @ 100°C | cSt | ASTM D445 | 15.4 | ▲ 2 | ▲ 17.1 |

GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0101125 **Received** : 15 Nov 2023
Lab Number : 06008040 **Diagnosed** : 30 Nov 2023
Unique Number : 10741802 **Diagnostician** : Jonathan Hester
Test Package : FLEET (Additional Tests: FuelDilution, Glycol, KF, PercentFuel)

GFL Environmental - 846 - Mayfield Hauling
 3426 State Route 45
 Mayfield, KY
 US 42066
 Contact: Jack Lindsey
 jack.lindsey@gflenv.com
 T: (270)970-3690
 F:

Certificate L2367
 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)