

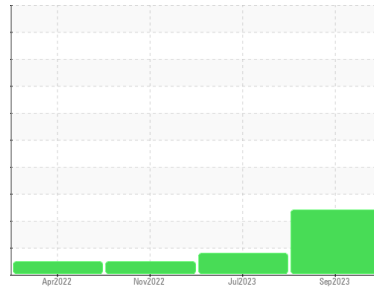


PROBLEM SUMMARY



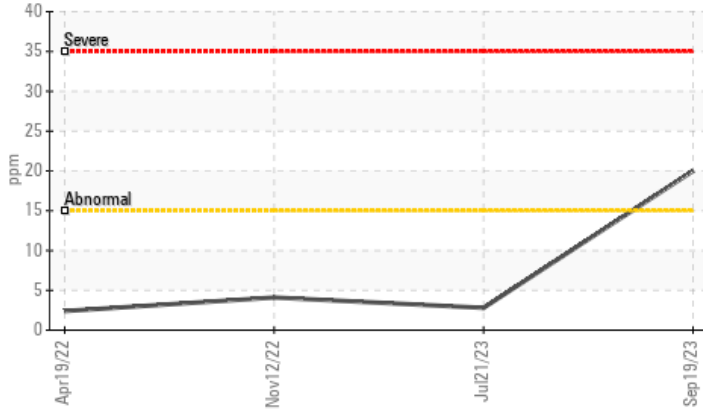
Machine Id
1103M
 Component
Diesel Engine
 Fluid
PETRO CANADA DURON SHP 15W40 (36 GAL)

Sample Rating Trend

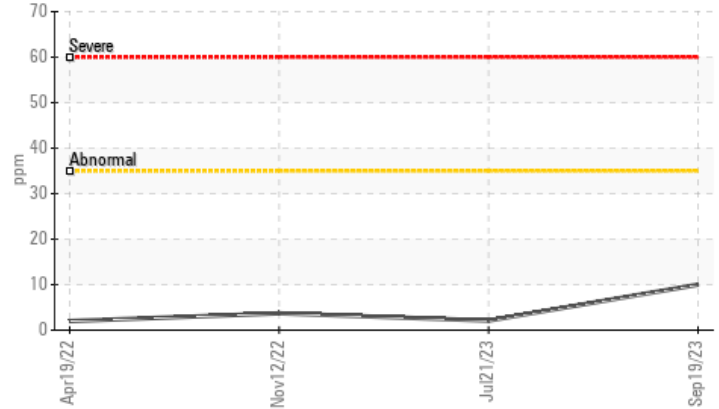


COMPONENT CONDITION SUMMARY

▲ Silicon (ppm)



▲ Aluminum (ppm)



RECOMMENDATION

No corrective action is recommended at this time.
 Resample at the next service interval to monitor.

PROBLEMATIC TEST RESULTS

| Sample Status | | | | ABNORMAL | ABNORMAL | NORMAL |
|---------------|-----|-------------|-----|-----------------|----------|--------|
| Aluminum | ppm | ASTM D5185m | >35 | ▲ 10 | 2 | 4 |
| Silicon | ppm | ASTM D5185m | >15 | ▲ 20 | 3 | 4 |

Customer Id: GFL410
 Sample No.: GFL0085008
 Lab Number: 05958479
 Test Package: FLEET



To manage this report scan the QR code

To discuss the diagnosis or test data:
 Don Baldrige +1
don.b505@comcast.net

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

RECOMMENDED ACTIONS

There are no recommended actions for this sample.

HISTORICAL DIAGNOSIS

21 Jul 2023 Diag: Sean Felton

WEAR



Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor. The copper level is abnormal. In the absence of other significant wear metals, suspect copper due to sources other than wear (i.e. cooling core). All other component wear rates are normal. There is no indication of any contamination in the oil. The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

view report



12 Nov 2022 Diag: Wes Davis

NORMAL



Resample at the next service interval to monitor. All component wear rates are normal. There is no indication of any contamination in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

view report



19 Apr 2022 Diag: Wes Davis

NORMAL



Resample at the next service interval to monitor. All component wear rates are normal. There is no indication of any contamination in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

view report





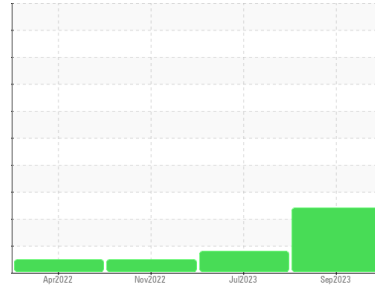
OIL ANALYSIS REPORT

Sample Rating Trend

DIRT



Machine Id
1103M
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (36 GAL)



DIAGNOSIS

Recommendation

No corrective action is recommended at this time. Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

Elemental level of silicon (Si) above normal.

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 INFORMATION

| | method | limit/base | current | history1 | history2 |
|---------------|-------------|-------------|--------------------|-------------|-------------|
| Sample Number | Client Info | | GFL0085008 | GFL0085027 | GFL0059216 |
| Sample Date | Client Info | | 19 Sep 2023 | 21 Jul 2023 | 12 Nov 2022 |
| Machine Age | mls | Client Info | 271166 | 263086 | 13063 |
| Oil Age | mls | Client Info | 8080 | 263086 | 1230 |
| Oil Changed | Client Info | | N/A | Changed | Changed |
| Sample Status | | | ABNORMAL | ABNORMAL | NORMAL |

CONTAMINATION

| | method | limit/base | current | history1 | history2 |
|--------|-----------|------------|----------------|----------|----------|
| Fuel | WC Method | >3.0 | <1.0 | <1.0 | <1.0 |
| Glycol | WC Method | | NEG | NEG | NEG |

WEAR METALS

| | method | limit/base | current | history1 | history2 |
|----------|--------|------------------|--------------|----------|----------|
| Iron | ppm | ASTM D5185m >65 | 13 | 10 | 25 |
| Chromium | ppm | ASTM D5185m >5 | <1 | <1 | <1 |
| Nickel | ppm | ASTM D5185m >3 | 0 | 0 | 0 |
| Titanium | ppm | ASTM D5185m >5 | <1 | 0 | <1 |
| Silver | ppm | ASTM D5185m >2 | 0 | 0 | 1 |
| Aluminum | ppm | ASTM D5185m >35 | ▲ 10 | 2 | 4 |
| Lead | ppm | ASTM D5185m >10 | 0 | 0 | 0 |
| Copper | ppm | ASTM D5185m >180 | 99 | ▲ 176 | 19 |
| Tin | ppm | ASTM D5185m >8 | <1 | 0 | <1 |
| Vanadium | ppm | ASTM D5185m | 0 | 0 | 0 |
| Cadmium | ppm | ASTM D5185m | 0 | 0 | 0 |

ADDITIVES

| | method | limit/base | current | history1 | history2 |
|------------|--------|------------------|--------------|----------|----------|
| Boron | ppm | ASTM D5185m 0 | 4 | 3 | 6 |
| Barium | ppm | ASTM D5185m 0 | 0 | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m 60 | 64 | 62 | 60 |
| Manganese | ppm | ASTM D5185m 0 | <1 | <1 | <1 |
| Magnesium | ppm | ASTM D5185m 1010 | 1049 | 1051 | 870 |
| Calcium | ppm | ASTM D5185m 1070 | 1219 | 1231 | 1201 |
| Phosphorus | ppm | ASTM D5185m 1150 | 1072 | 1036 | 998 |
| Zinc | ppm | ASTM D5185m 1270 | 1389 | 1385 | 1200 |
| Sulfur | ppm | ASTM D5185m 2060 | 3369 | 2797 | 3549 |

CONTAMINANTS

| | method | limit/base | current | history1 | history2 |
|-----------|--------|-----------------|-------------|----------|----------|
| Silicon | ppm | ASTM D5185m >15 | ▲ 20 | 3 | 4 |
| Sodium | ppm | ASTM D5185m | 5 | 3 | 0 |
| Potassium | ppm | ASTM D5185m >20 | 4 | <1 | 5 |

INFRA-RED

| | method | limit/base | current | history1 | history2 |
|-----------|----------|-----------------|-------------|----------|----------|
| Soot % | % | *ASTM D7844 >3 | 0.4 | 0.7 | 0.7 |
| Nitration | Abs/cm | *ASTM D7624 >20 | 7.3 | 8.1 | 10.7 |
| Sulfation | Abs/.1mm | *ASTM D7415 >30 | 19.5 | 20.2 | 24.8 |

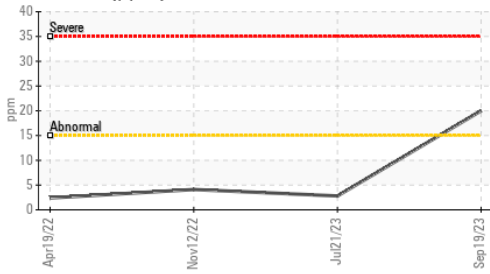
FLUID DEGRADATION

| | method | limit/base | current | history1 | history2 |
|------------------|----------|-----------------|-------------|----------|----------|
| Oxidation | Abs/.1mm | *ASTM D7414 >25 | 14.9 | 16.0 | 18.8 |
| Base Number (BN) | mg KOH/g | ASTM D2896 9.8 | 8.2 | 7.9 | 10.3 |

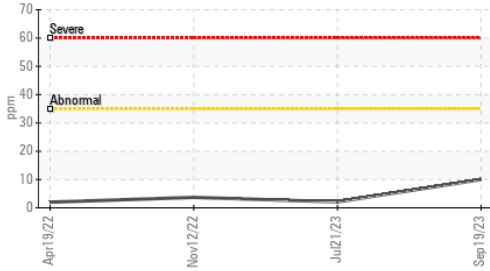


OIL ANALYSIS REPORT

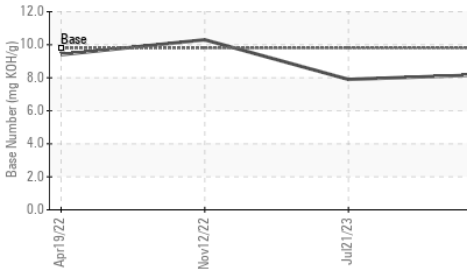
▲ Silicon (ppm)



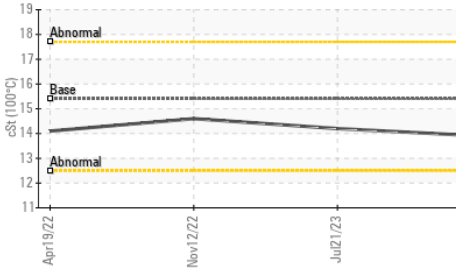
▲ Aluminum (ppm)



Base Number



Viscosity @ 100°C

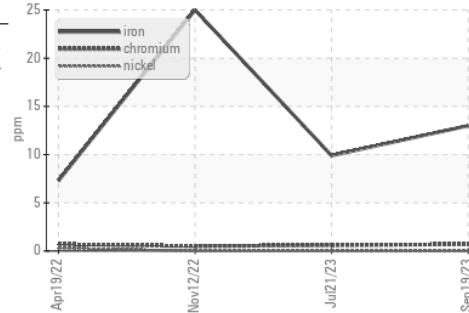


| VISUAL | method | limit/base | current | history1 | history2 |
|------------------|--------|------------|---------|----------|----------|
| White Metal | scalar | *Visual | NONE | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | NONE |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

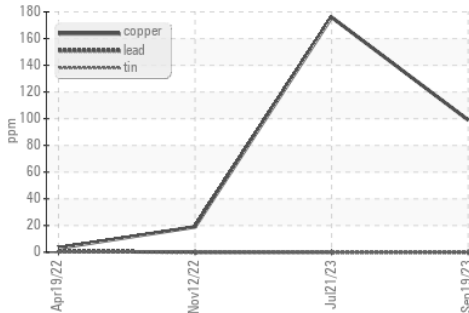
| FLUID PROPERTIES | method | limit/base | current | history1 | history2 | |
|------------------|--------|------------|---------|-------------|----------|------|
| Visc @ 100°C | cSt | ASTM D445 | 15.4 | 13.9 | 14.2 | 14.6 |

GRAPHS

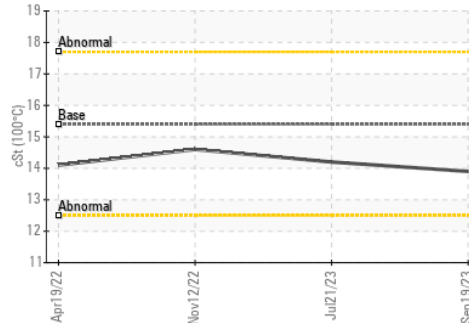
Ferrous Alloys



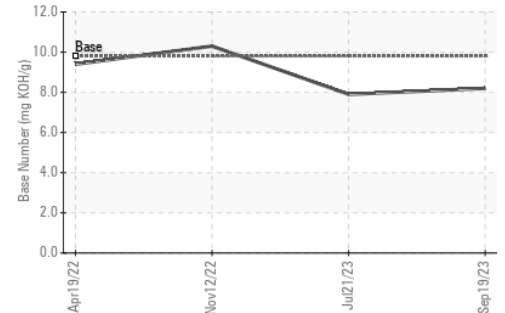
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
 Sample No. : GFL0085008 Received : 22 Sep 2023
 Lab Number : 05958479 Diagnosed : 24 Sep 2023
 Unique Number : 10659692 Diagnostician : Don Baldrige
 Test Package : FLEET

GFL Environmental - 410 - Michigan West
 39000 Van Born Rd
 Wayne, MI
 US 48184
 Contact: Belal Dgheish
 bdgheish@gflenv.com
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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)