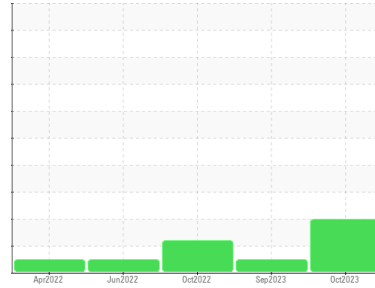




PROBLEM SUMMARY

Sample Rating Trend



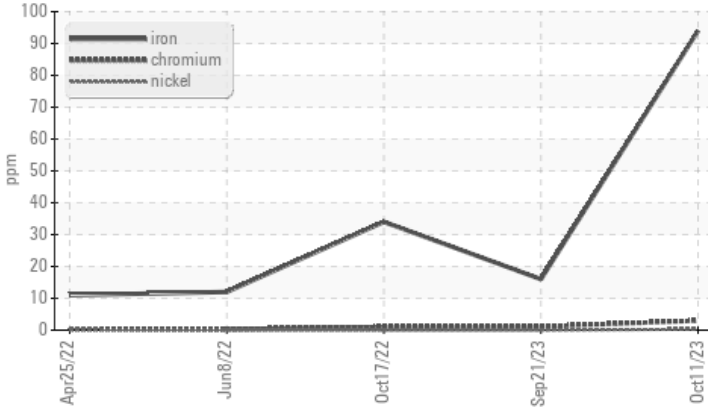
GLYCOL



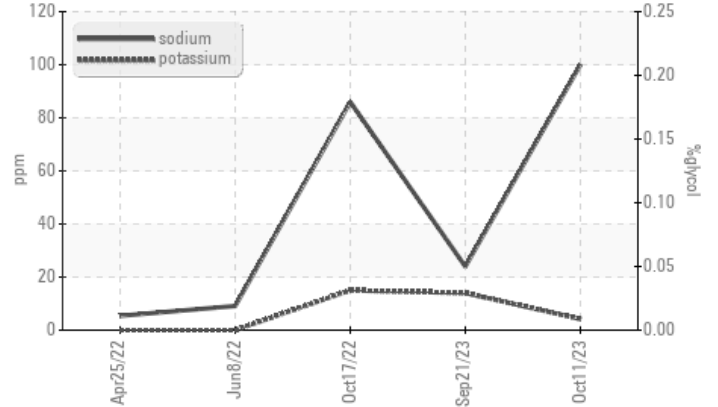
Machine Id
4653M
 Component
Diesel Engine
 Fluid
PETRO CANADA DURON SHP 15W40 (--- GAL)

COMPONENT CONDITION SUMMARY

▲ Ferrous Alloys



▲ Glycol Contamination



RECOMMENDATION

Oil and filter change at the time of sampling has been noted. No corrective action is recommended at this time. Resample at the next service interval to monitor.

PROBLEMATIC TEST RESULTS

| Sample Status | | | ABNORMAL | NORMAL | ATTENTION |
|---------------|-----|-----------------|----------|--------|-----------|
| Iron | ppm | ASTM D5185m >90 | ▲ 94 | 16 | 34 |
| Sodium | ppm | ASTM D5185m | ▲ 100 | 24 | ▲ 86 |

Customer Id: GFL405
 Sample No.: GFL0097671
 Lab Number: 06010528
 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

| Action | Status | Date | Done By | Description |
|---------------|--------|------|---------|---|
| Change Fluid | --- | --- | ? | Oil and filter change at the time of sampling has been noted. |
| Change Filter | --- | --- | ? | Oil and filter change at the time of sampling has been noted. |

HISTORICAL DIAGNOSIS

21 Sep 2023 Diag: Don Baldrige

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



17 Oct 2022 Diag: Jonathan Hester

GLYCOL



Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor. All component wear rates are normal. Sodium and/or potassium levels are high. Test for glycol is negative. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

view report



08 Jun 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.

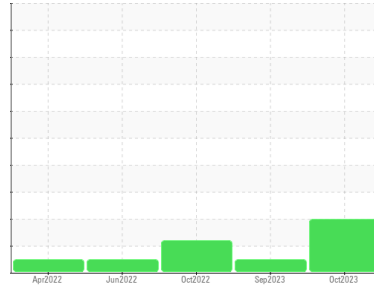
view report





OIL ANALYSIS REPORT

Sample Rating Trend



GLYCOL



Machine Id
4653M
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (--- GAL)

DIAGNOSIS

Recommendation

Oil and filter change at the time of sampling has been noted. No corrective action is recommended at this time. Resample at the next service interval to monitor.

Wear

Cylinder, crank, or cam shaft wear is indicated. All other component wear rates are normal.

Contamination

Sodium and/or potassium levels are high. Test for glycol is negative.

Fluid Condition

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

SAMPLE INFORMATION

| method | limit/base | current | history1 | history2 |
|---------------|-------------|--------------------|-------------|-------------|
| Sample Number | Client Info | GFL0097671 | GFL0084947 | GFL0052075 |
| Sample Date | Client Info | 11 Oct 2023 | 21 Sep 2023 | 17 Oct 2022 |
| Machine Age | hrs | 16414 | 16263 | 13576 |
| Oil Age | hrs | 151 | 2687 | 13576 |
| Oil Changed | Client Info | Changed | Changed | Changed |
| Sample Status | | ABNORMAL | NORMAL | ATTENTION |

CONTAMINATION

| method | limit/base | current | history1 | history2 |
|--------|----------------|----------------|----------|----------|
| Fuel | WC Method >3.0 | <1.0 | <1.0 | <1.0 |
| Water | WC Method >0.2 | NEG | NEG | NEG |

WEAR METALS

| method | limit/base | current | history1 | history2 |
|----------|----------------------|--------------|----------|----------|
| Iron | ppm ASTM D5185m >90 | ▲ 94 | 16 | 34 |
| Chromium | ppm ASTM D5185m >20 | 3 | 1 | 1 |
| Nickel | ppm ASTM D5185m >2 | <1 | 0 | 0 |
| Titanium | ppm ASTM D5185m >2 | <1 | 0 | 0 |
| Silver | ppm ASTM D5185m >2 | 0 | 0 | 0 |
| Aluminum | ppm ASTM D5185m >20 | 6 | 9 | 7 |
| Lead | ppm ASTM D5185m >40 | 0 | 0 | 0 |
| Copper | ppm ASTM D5185m >330 | 6 | 4 | <1 |
| Tin | ppm ASTM D5185m >15 | <1 | <1 | 0 |
| Vanadium | ppm ASTM D5185m | <1 | 0 | 0 |
| Cadmium | ppm ASTM D5185m | 0 | 0 | 0 |

ADDITIVES

| method | limit/base | current | history1 | history2 |
|------------|----------------------|-------------|----------|----------|
| Boron | ppm ASTM D5185m 0 | 5 | 3 | 6 |
| Barium | ppm ASTM D5185m 0 | 0 | 0 | 0 |
| Molybdenum | ppm ASTM D5185m 60 | 65 | 62 | 53 |
| Manganese | ppm ASTM D5185m 0 | 1 | <1 | 1 |
| Magnesium | ppm ASTM D5185m 1010 | 965 | 986 | 849 |
| Calcium | ppm ASTM D5185m 1070 | 1106 | 1132 | 978 |
| Phosphorus | ppm ASTM D5185m 1150 | 1007 | 1088 | 849 |
| Zinc | ppm ASTM D5185m 1270 | 1334 | 1311 | 1157 |
| Sulfur | ppm ASTM D5185m 2060 | 2365 | 3795 | 2854 |

CONTAMINANTS

| method | limit/base | current | history1 | history2 |
|-----------|---------------------|--------------|----------|----------|
| Silicon | ppm ASTM D5185m >25 | 10 | 7 | 5 |
| Sodium | ppm ASTM D5185m | ▲ 100 | 24 | ▲ 86 |
| Potassium | ppm ASTM D5185m >20 | 4 | 14 | 15 |
| Glycol | % *ASTM D2982 | NEG | NEG | NEG |

INFRA-RED

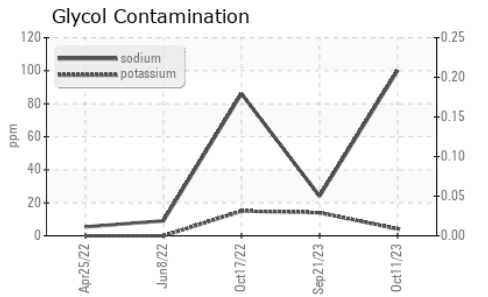
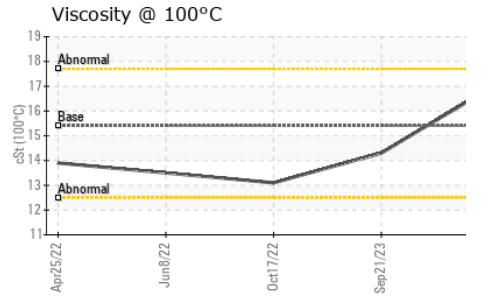
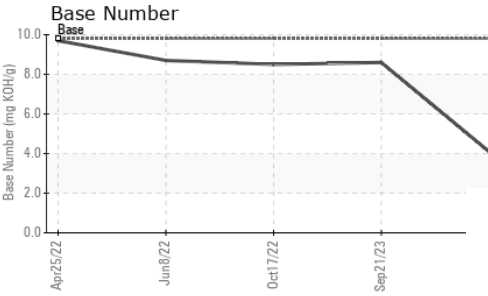
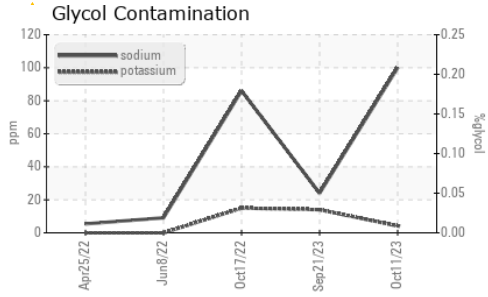
| method | limit/base | current | history1 | history2 |
|-----------|--------------------------|-------------|----------|----------|
| Soot % | % *ASTM D7844 >6 | 1.4 | 0.4 | 0.1 |
| Nitration | Abs/cm *ASTM D7624 >20 | 18.3 | 7.0 | 14.0 |
| Sulfation | Abs/.1mm *ASTM D7415 >30 | 33.3 | 18.5 | 13.4 |

FLUID DEGRADATION

| method | limit/base | current | history1 | history2 |
|------------------|--------------------------|-------------|----------|----------|
| Oxidation | Abs/.1mm *ASTM D7414 >25 | 40.6 | 14.3 | 7.9 |
| Base Number (BN) | mg KOH/g ASTM D2896 9.8 | 4.1 | 8.6 | 8.5 |



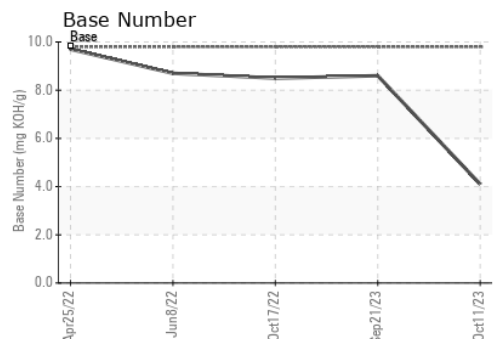
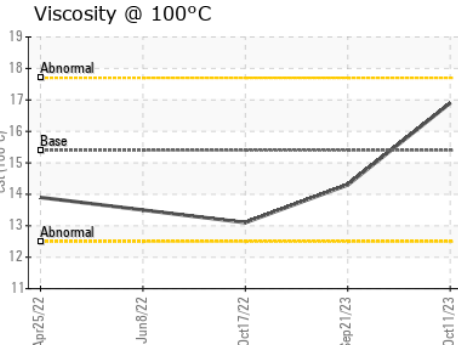
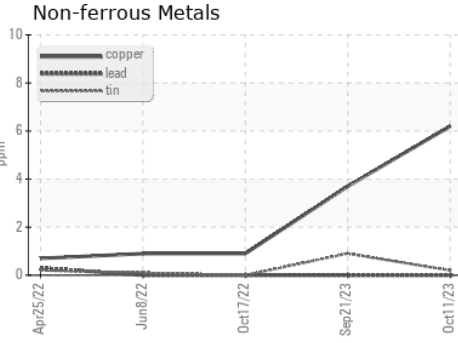
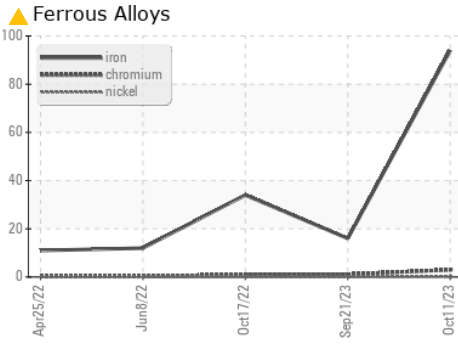
OIL ANALYSIS REPORT



| PARAMETER | 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 |

| PARAMETER | method | limit/base | current | history1 | history2 |
|--------------|--------|------------|---------|----------|----------|
| Visc @ 100°C | cSt | ASTM D445 | 15.4 | 16.9 | 14.3 |

GRAPHS



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0097671 **Received** : 17 Nov 2023
Lab Number : 06010528 **Diagnosed** : 20 Nov 2023
Unique Number : 10749672 **Diagnostician** : Don Baldrige
Test Package : FLEET (Additional Tests: Glycol)

GFL Environmental - 405 - Arbor Hills
 7400 Napier Rd
 NORTHVILLE, MI
 US 48168
 Contact: Anthony Hopkins
 ahopkins@gflenv.com

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)