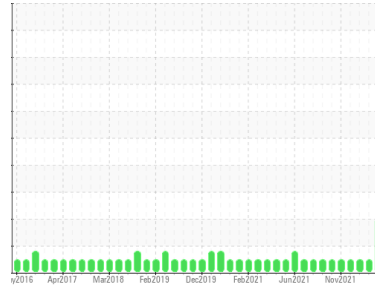




PROBLEM SUMMARY

Sample Rating Trend



WEAR



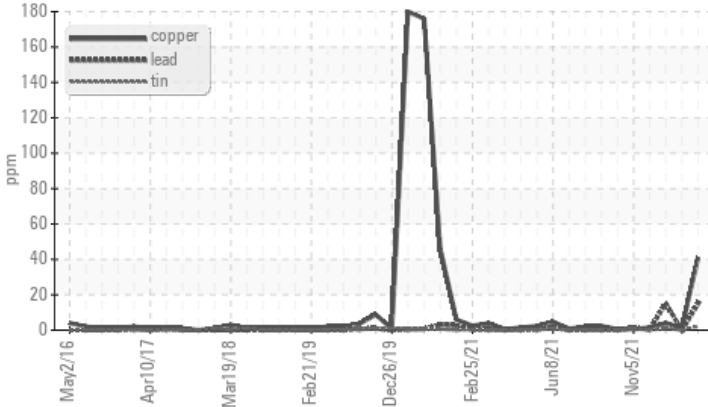
Machine Id
3646C

Component
Natural Gas Engine

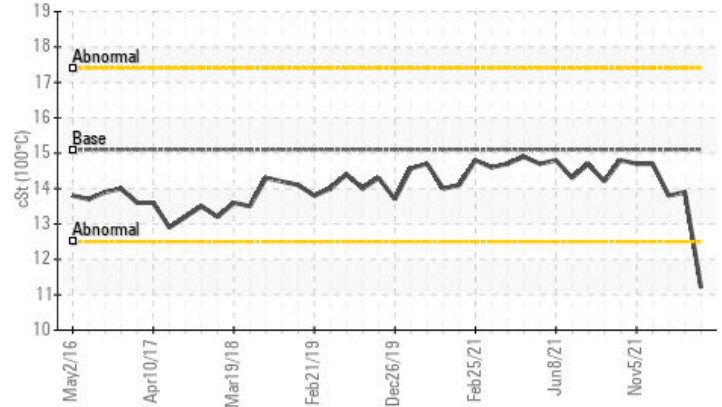
Fluid
PETRO CANADA DURON GEO LD 15W40 (--- GAL)

COMPONENT CONDITION SUMMARY

▲ Non-ferrous Metals



▲ Viscosity @ 100°C



RECOMMENDATION

Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

PROBLEMATIC TEST RESULTS

| Sample Status | | | | ABNORMAL | NORMAL | NORMAL |
|---------------|-----|-------------|------|-----------------|--------|--------|
| Lead | ppm | ASTM D5185m | >30 | ▲ 15 | 0 | 15 |
| Copper | ppm | ASTM D5185m | >35 | ▲ 41 | 1 | 4 |
| Visc @ 100°C | cSt | ASTM D445 | 15.1 | ▲ 11.2 | 13.9 | 13.8 |

Customer Id: GFL005
Sample No.: GFL0092694
Lab Number: 05952531
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 |
|---------------|--------|------|---------|---|
| 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

20 Dec 2022 Diag: Doug Bogart

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](#)



06 Jun 2022 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](#)



20 Dec 2021 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.

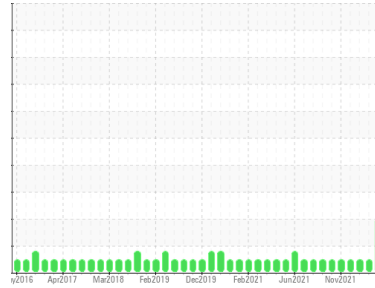
[view report](#)





OIL ANALYSIS REPORT

Sample Rating Trend



WEAR



Machine Id
3646C

Component
Natural Gas Engine

Fluid
PETRO CANADA DURON GEO LD 15W40 (--- GAL)

DIAGNOSIS

▲ Recommendation

Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

▲ Wear

Bearing and/or bushing wear is indicated.

Contamination

There is no indication of any contamination 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. Confirm oil type.

SAMPLE INFORMATION

| | method | limit/base | current | history1 | history2 |
|---------------|-------------|-------------|--------------------|-------------|-------------|
| Sample Number | Client Info | | GFL0092694 | GFL0048909 | GFL0048877 |
| Sample Date | Client Info | | 13 Sep 2023 | 20 Dec 2022 | 06 Jun 2022 |
| Machine Age | hrs | Client Info | 33277 | 0 | 0 |
| Oil Age | hrs | Client Info | 552 | 594 | 659 |
| Oil Changed | Client Info | | Changed | Changed | Changed |
| Sample Status | | | ABNORMAL | NORMAL | NORMAL |

WEAR METALS

| | method | limit/base | current | history1 | history2 |
|----------|--------|-----------------|--------------|----------|----------|
| Iron | ppm | ASTM D5185m >50 | 28 | 10 | 18 |
| Chromium | ppm | ASTM D5185m >4 | 4 | 2 | 4 |
| Nickel | ppm | ASTM D5185m >2 | 1 | 1 | <1 |
| Titanium | ppm | ASTM D5185m | <1 | 0 | 0 |
| Silver | ppm | ASTM D5185m >3 | 0 | 0 | <1 |
| Aluminum | ppm | ASTM D5185m >9 | 4 | 2 | 4 |
| Lead | ppm | ASTM D5185m >30 | ▲ 15 | 0 | 15 |
| Copper | ppm | ASTM D5185m >35 | ▲ 41 | 1 | 4 |
| Tin | ppm | ASTM D5185m >4 | 2 | 0 | <1 |
| Antimony | ppm | ASTM D5185m | --- | --- | --- |
| Vanadium | ppm | ASTM D5185m | <1 | <1 | 0 |
| Cadmium | ppm | ASTM D5185m | <1 | 0 | 0 |

ADDITIVES

| | method | limit/base | current | history1 | history2 |
|------------|--------|------------------|-------------|----------|----------|
| Boron | ppm | ASTM D5185m 50 | 5 | 20 | 16 |
| Barium | ppm | ASTM D5185m 5 | 44 | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m 50 | 52 | 48 | 55 |
| Manganese | ppm | ASTM D5185m 0 | 2 | <1 | <1 |
| Magnesium | ppm | ASTM D5185m 560 | 752 | 539 | 606 |
| Calcium | ppm | ASTM D5185m 1510 | 1009 | 1436 | 1606 |
| Phosphorus | ppm | ASTM D5185m 780 | 665 | 751 | 759 |
| Zinc | ppm | ASTM D5185m 870 | 870 | 928 | 958 |
| Sulfur | ppm | ASTM D5185m 2040 | 2611 | 2806 | 2489 |

CONTAMINANTS

| | method | limit/base | current | history1 | history2 |
|-----------|--------|-------------------|-----------|----------|----------|
| Silicon | ppm | ASTM D5185m >+100 | 20 | 9 | 4 |
| Sodium | ppm | ASTM D5185m | 8 | 4 | 10 |
| Potassium | ppm | ASTM D5185m >20 | 4 | <1 | 0 |

INFRA-RED

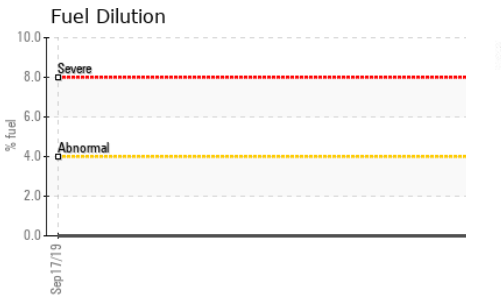
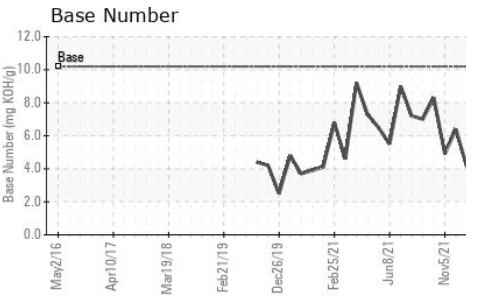
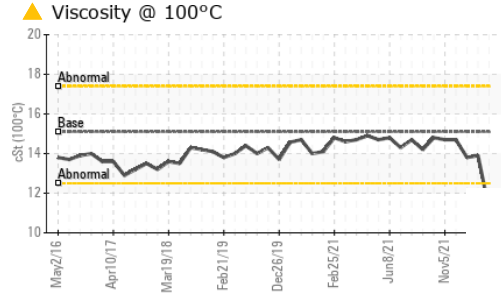
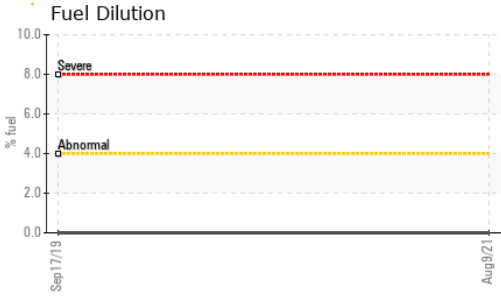
| | method | limit/base | current | history1 | history2 |
|-----------|----------|-----------------|-------------|----------|----------|
| Soot % | % | *ASTM D7844 | 0.1 | 0.1 | 0 |
| Nitration | Abs/cm | *ASTM D7624 >20 | 10.2 | 9.3 | 12.5 |
| Sulfation | Abs/.1mm | *ASTM D7415 >30 | 23.8 | 19.2 | 26.9 |

FLUID DEGRADATION

| | method | limit/base | current | history1 | history2 |
|------------------|----------|-----------------|-------------|----------|----------|
| Oxidation | Abs/.1mm | *ASTM D7414 >25 | 15.8 | 16.0 | 24.0 |
| Base Number (BN) | mg KOH/g | ASTM D2896 10.2 | 4.1 | 8.5 | 4.1 |



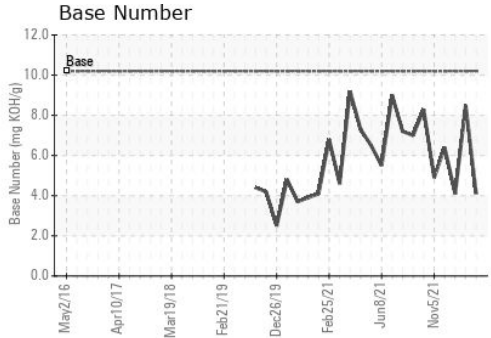
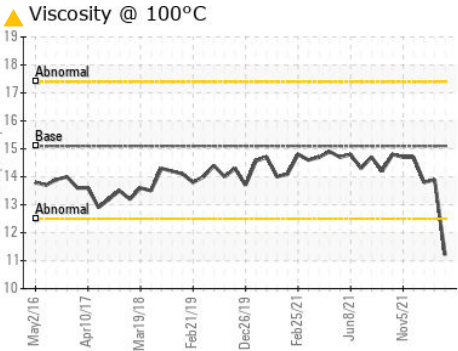
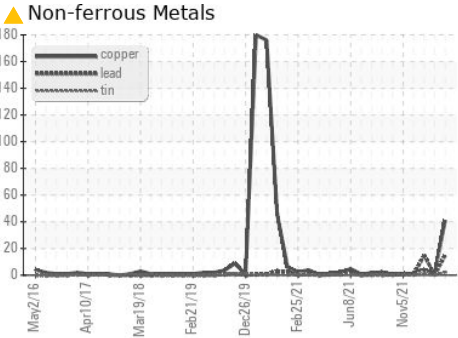
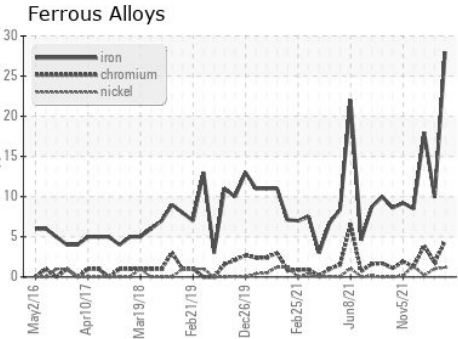
OIL ANALYSIS REPORT



| 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 | >0.1 | NEG | NEG |
| Free Water | scalar | *Visual | | NEG | NEG |

| FLUID PROPERTIES | method | limit/base | current | history1 | history2 |
|------------------|--------|------------|---------|----------|----------|
| Visc @ 100°C | cSt | ASTM D445 | ▲ 11.2 | 13.9 | 13.8 |

GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0092694 **Received** : 15 Sep 2023
Lab Number : 05952531 **Diagnosed** : 19 Sep 2023
Unique Number : 10648490 **Diagnostician** : Jonathan Hester
Test Package : FLEET (Additional Tests: FUELDILUTION)

GFL Environmental - 005 - Wilson/Tri-East(CNG)
 2810 Contentnea Road S
 Wilson, NC
 US 27893-8501
 Contact: SPENCER LIGGON
 spencer.liggon@gflenv.com
 T: (800)207-6618
 F:

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)