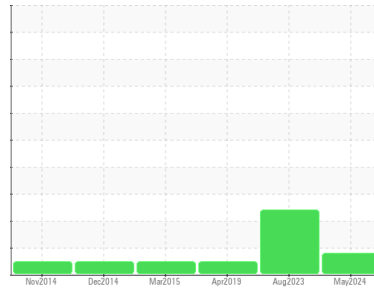




OIL ANALYSIS REPORT

Sample Rating Trend



Area
(JN5Z43)
 Machine Id
11101
 Component
Diesel Engine
 Fluid
PETRO CANADA DURON SHP 15W40 (7 GAL)

DIAGNOSIS

Recommendation

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

Wear

The aluminum level is abnormal. All other 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 INFORMATION

| | method | limit/base | current | history1 | history2 |
|---------------|-------------|-------------|--------------------|-------------|-------------|
| Sample Number | Client Info | | GFL0077443 | GFL0071334 | GFLI-485770 |
| Sample Date | Client Info | | 21 May 2024 | 09 Aug 2023 | 15 Apr 2019 |
| Machine Age | mls | Client Info | 216201 | 0 | 216201 |
| Oil Age | mls | Client Info | 0 | 0 | 113550 |
| Oil Changed | Client Info | | Not Chngd | Not Chngd | Changed |
| Sample Status | | | ABNORMAL | ABNORMAL | NORMAL |

CONTAMINATION

| | method | limit/base | current | history1 | history2 |
|--------|-----------|------------|----------------|----------|----------|
| Fuel | WC Method | >3.0 | <1.0 | <1.0 | 0.5 |
| Water | WC Method | >0.2 | NEG | NEG | NEG |
| Glycol | WC Method | | NEG | NEG | NEG |

WEAR METALS

| | method | limit/base | current | history1 | history2 |
|----------|--------|------------------|--------------|----------|----------|
| Iron | ppm | ASTM D5185m >130 | 49 | 41 | 61 |
| Chromium | ppm | ASTM D5185m >10 | 4 | 11 | 1 |
| Nickel | ppm | ASTM D5185m >4 | <1 | <1 | 1 |
| Titanium | ppm | ASTM D5185m >2 | <1 | <1 | 0 |
| Silver | ppm | ASTM D5185m >2 | 0 | 0 | 0 |
| Aluminum | ppm | ASTM D5185m >20 | ▲ 30 | 19 | 6 |
| Lead | ppm | ASTM D5185m >20 | <1 | <1 | 0 |
| Copper | ppm | ASTM D5185m >125 | 8 | 3 | 1 |
| Tin | ppm | ASTM D5185m >4 | 1 | 0 | 0 |
| Antimony | ppm | ASTM D5185m | --- | --- | 0 |
| 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 | 3 | 4 | 101 |
| Barium | ppm | ASTM D5185m 0 | 0 | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m 60 | 63 | 58 | 102 |
| Manganese | ppm | ASTM D5185m 0 | 1 | <1 | 0 |
| Magnesium | ppm | ASTM D5185m 1010 | 902 | 855 | 609 |
| Calcium | ppm | ASTM D5185m 1070 | 1067 | 1007 | 1565 |
| Phosphorus | ppm | ASTM D5185m 1150 | 1006 | 974 | 735 |
| Zinc | ppm | ASTM D5185m 1270 | 1218 | 1119 | 927 |
| Sulfur | ppm | ASTM D5185m 2060 | 2721 | 2924 | --- |
| Lithium | ppm | ASTM D5185m | --- | --- | 0 |

CONTAMINANTS

| | method | limit/base | current | history1 | history2 |
|-----------|--------|-----------------|-----------|----------|----------|
| Silicon | ppm | ASTM D5185m >25 | 7 | ▲ 51 | 8 |
| Sodium | ppm | ASTM D5185m | 7 | 2 | 4 |
| Potassium | ppm | ASTM D5185m >20 | 21 | 2 | 8 |

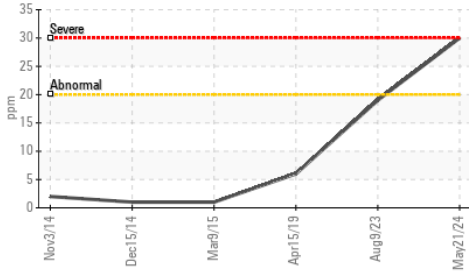
INFRA-RED

| | method | limit/base | current | history1 | history2 |
|-----------|----------|-----------------|-------------|----------|----------|
| Soot % | % | *ASTM D7844 >6 | 0.9 | 0.2 | 0.8 |
| Nitration | Abs/cm | *ASTM D7624 >20 | 11.3 | 4.7 | 12 |
| Sulfation | Abs/.1mm | *ASTM D7415 >30 | 24.1 | 16.7 | --- |

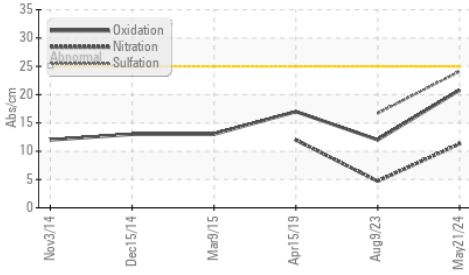


OIL ANALYSIS REPORT

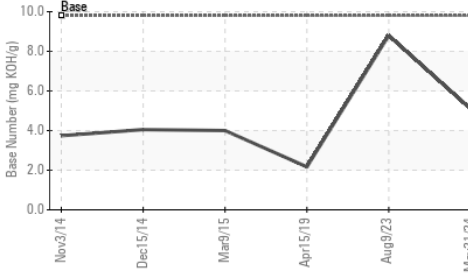
▲ Aluminum (ppm)



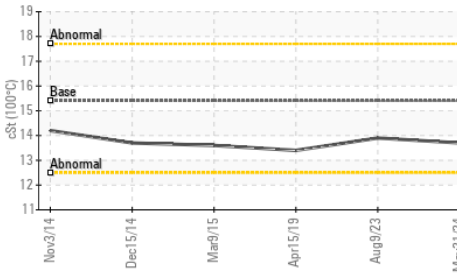
FT-IR (Direct Trend)



Base Number



Viscosity @ 100°C



FLUID DEGRADATION

| method | limit/base | current | history1 | history2 | |
|------------------|----------------------|---------|----------|----------|------|
| Oxidation | Abs/.1mm *ASTM D7414 | >25 | 20.8 | 12.0 | 17 |
| Base Number (BN) | mg KOH/g ASTM D2896 | 9.8 | 5.1 | 8.8 | 2.17 |

VISUAL

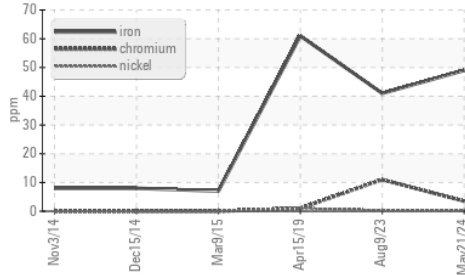
| method | limit/base | current | history1 | history2 |
|------------------|----------------|---------|----------|----------|
| White Metal | scalar *Visual | NONE | NONE | --- |
| Yellow Metal | scalar *Visual | NONE | NONE | --- |
| Precipitate | scalar *Visual | NONE | NONE | --- |
| Silt | scalar *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 | >0.2 | NEG | --- |

FLUID PROPERTIES

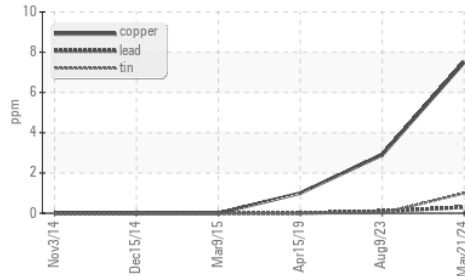
| method | limit/base | current | history1 | history2 | |
|--------------|---------------|---------|----------|----------|------|
| Visc @ 100°C | cSt ASTM D445 | 15.4 | 13.7 | 13.9 | 13.4 |

GRAPHS

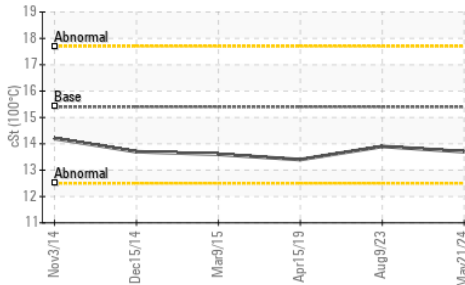
Ferrous Alloys



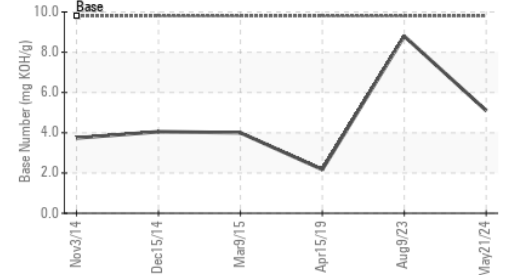
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0077443
Lab Number : 06193753
Unique Number : 11050505
Test Package : FLEET

Received : 29 May 2024
Tested : 30 May 2024
Diagnosed : 30 May 2024 - Sean Felton

GFL Environmental - 072 - Americus - Transwaste
 361 McMath Mill Road
 Americus, GA
 US 31719

Contact: RICHARD HEINZERLING
 richard.heinzerling@gflenv.com
 T: (229)924-3669

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)