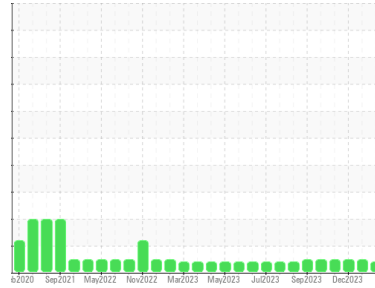




OIL ANALYSIS REPORT

Sample Rating Trend



VISCOSITY



Area
(ECU365)

Machine Id
2869

Component
Diesel Engine

Fluid
PETRO CANADA DURON SHP 15W40 (7 GAL)

DIAGNOSIS

Recommendation

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

Wear

All component wear rates are normal.

Contamination

Tests indicate that there is no fuel present in the oil. 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 | | GFL0112348 | GFL0109877 | GFL0107257 |
| Sample Date | Client Info | | 29 Feb 2024 | 18 Jan 2024 | 29 Dec 2023 |
| Machine Age | hrs | Client Info | 3187 | 3003 | 2868 |
| Oil Age | hrs | Client Info | 456 | 272 | 137 |
| Oil Changed | Client Info | | Changed | Not Changd | Not Changd |
| Sample Status | | | ATTENTION | NORMAL | NORMAL |

CONTAMINATION

| | method | limit/base | current | history1 | history2 |
|--------|-----------|------------|------------|----------|----------|
| 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 >165 | 20 | 13 | 5 |
| Chromium | ppm | ASTM D5185m >5 | 1 | <1 | <1 |
| Nickel | ppm | ASTM D5185m >4 | <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 | 2 | 2 |
| Lead | ppm | ASTM D5185m >150 | <1 | 0 | 0 |
| Copper | ppm | ASTM D5185m >90 | 4 | 1 | 3 |
| Tin | ppm | ASTM D5185m >5 | <1 | 0 | <1 |
| 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 0 | 6 | 8 | 8 |
| Barium | ppm | ASTM D5185m 0 | 0 | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m 60 | 59 | 63 | 57 |
| Manganese | ppm | ASTM D5185m 0 | <1 | <1 | <1 |
| Magnesium | ppm | ASTM D5185m 1010 | 827 | 932 | 831 |
| Calcium | ppm | ASTM D5185m 1070 | 976 | 1085 | 979 |
| Phosphorus | ppm | ASTM D5185m 1150 | 988 | 1018 | 995 |
| Zinc | ppm | ASTM D5185m 1270 | 1149 | 1254 | 1129 |
| Sulfur | ppm | ASTM D5185m 2060 | 2993 | 3170 | 2788 |

CONTAMINANTS

| | method | limit/base | current | history1 | history2 |
|-----------|--------|-----------------|------------|----------|----------|
| Silicon | ppm | ASTM D5185m >35 | 5 | 6 | 3 |
| Sodium | ppm | ASTM D5185m | 2 | 5 | 0 |
| Potassium | ppm | ASTM D5185m >20 | 9 | <1 | <1 |
| Fuel | % | ASTM D3524 >3.0 | 0.4 | <1.0 | <1.0 |

INFRA-RED

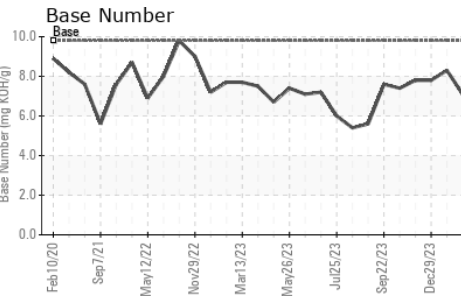
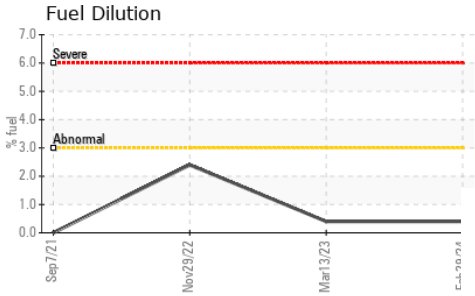
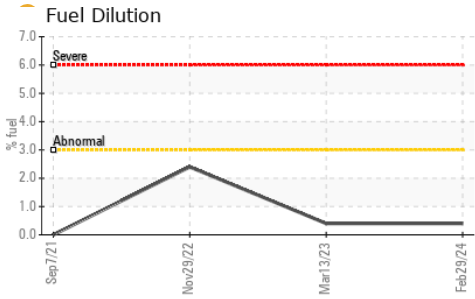
| | method | limit/base | current | history1 | history2 |
|-----------|----------|------------------|-------------|----------|----------|
| Soot % | % | *ASTM D7844 >7.5 | 0.3 | 0.5 | 0.2 |
| Nitration | Abs/cm | *ASTM D7624 >20 | 7.4 | 6.1 | 5.5 |
| Sulfation | Abs/.1mm | *ASTM D7415 >30 | 18.1 | 17.6 | 16.8 |

FLUID DEGRADATION

| | method | limit/base | current | history1 | history2 |
|------------------|----------|-----------------|-------------|----------|----------|
| Oxidation | Abs/.1mm | *ASTM D7414 >25 | 13.6 | 12.2 | 12.4 |
| Base Number (BN) | mg KOH/g | ASTM D2896 9.8 | 7.1 | 8.3 | 7.8 |



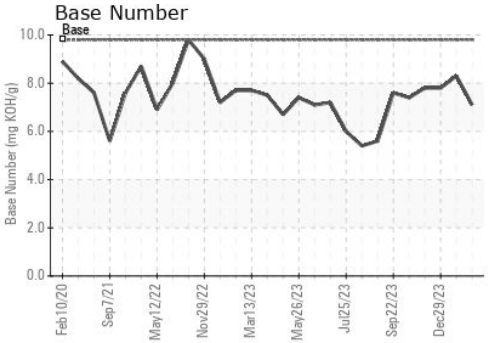
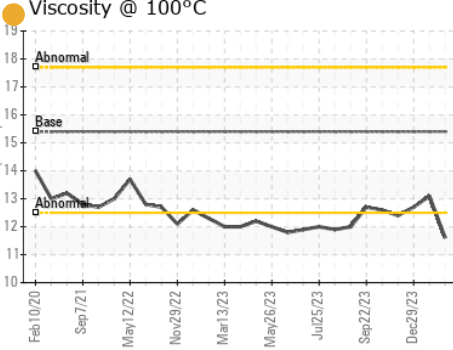
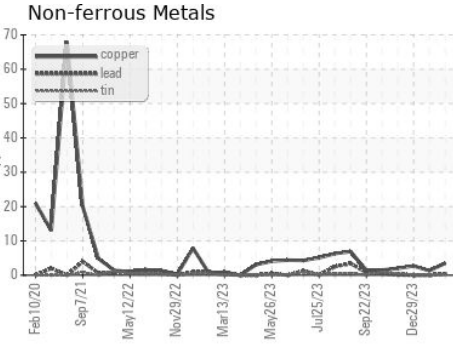
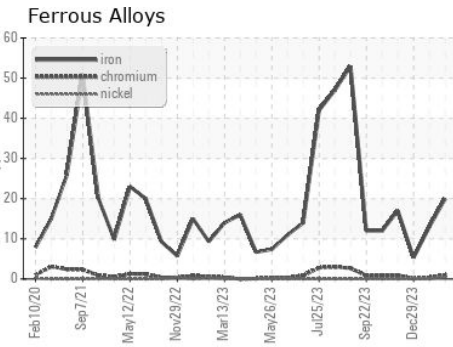
OIL ANALYSIS REPORT



| 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 | >0.2 | NEG | NEG |
| Free Water | scalar | *Visual | | NEG | NEG |

| FLUID PROPERTIES | method | limit/base | current | history1 | history2 | |
|------------------|--------|------------|---------|----------|----------|------|
| Visc @ 100°C | cSt | ASTM D445 | 15.4 | ● 11.6 | 13.1 | 12.7 |

GRAPHS



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0112348 **Received** : 01 Mar 2024
Lab Number : 06105710 **Tested** : 05 Mar 2024
Unique Number : 10903940 **Diagnosed** : 05 Mar 2024 - Sean Felton
Test Package : FLEET (Additional Tests: FuelDilution, PercentFuel)

GFL Environmental - 010 - Stockbridge
 1280 Rum Creek Parkway
 Stockbridge, GA
 US 30281
 Contact: JOSHUA TINKER
 joshuatinker@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)

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