



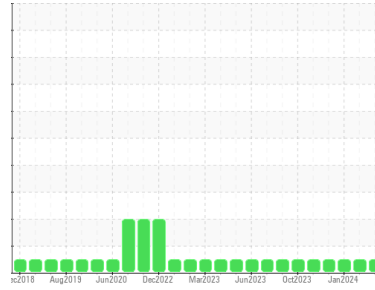
OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL



Machine Id
428033-402325
 Component
Diesel Engine
 Fluid
PETRO CANADA DURON SHP 15W40 (--- GAL)



DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

All 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 | GFL0109824 | GFL0103307 | GFL0099933 |
| Sample Date | Client Info | 14 Feb 2024 | 23 Jan 2024 | 02 Jan 2024 |
| Machine Age | hrs | 2859 | 2716 | 2580 |
| Oil Age | hrs | 0 | 0 | 0 |
| Oil Changed | Client Info | Not Chngd | Not Chngd | Not Chngd |
| Sample Status | | NORMAL | NORMAL | NORMAL |

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 |
| Glycol | WC Method | NEG | NEG | NEG |

WEAR METALS

| method | limit/base | current | history1 | history2 |
|----------|----------------------|--------------|----------|----------|
| Iron | ppm ASTM D5185m >120 | 3 | 3 | 13 |
| Chromium | ppm ASTM D5185m >20 | 0 | 0 | <1 |
| Nickel | ppm ASTM D5185m >5 | <1 | 0 | <1 |
| Titanium | ppm ASTM D5185m >2 | 0 | 0 | <1 |
| Silver | ppm ASTM D5185m >2 | 0 | 0 | 0 |
| Aluminum | ppm ASTM D5185m >20 | 2 | 2 | 1 |
| Lead | ppm ASTM D5185m >40 | <1 | <1 | <1 |
| Copper | ppm ASTM D5185m >330 | 2 | <1 | 3 |
| Tin | ppm ASTM D5185m >15 | <1 | <1 | 2 |
| Vanadium | ppm ASTM D5185m | 0 | 0 | <1 |
| Cadmium | ppm ASTM D5185m | 0 | 0 | 0 |

ADDITIVES

| method | limit/base | current | history1 | history2 |
|------------|----------------------|--------------|----------|----------|
| Boron | ppm ASTM D5185m 0 | 7 | 11 | 2 |
| Barium | ppm ASTM D5185m 0 | 0 | 0 | 0 |
| Molybdenum | ppm ASTM D5185m 60 | 59 | 56 | 60 |
| Manganese | ppm ASTM D5185m 0 | <1 | 0 | <1 |
| Magnesium | ppm ASTM D5185m 1010 | 905 | 953 | 924 |
| Calcium | ppm ASTM D5185m 1070 | 1056 | 1146 | 1037 |
| Phosphorus | ppm ASTM D5185m 1150 | 1001 | 1102 | 1023 |
| Zinc | ppm ASTM D5185m 1270 | 1253 | 1088 | 1207 |
| Sulfur | ppm ASTM D5185m 2060 | 3111 | 2861 | 3005 |

CONTAMINANTS

| method | limit/base | current | history1 | history2 |
|-----------|---------------------|----------|----------|----------|
| Silicon | ppm ASTM D5185m >25 | 6 | 4 | 7 |
| Sodium | ppm ASTM D5185m | 2 | 0 | 3 |
| Potassium | ppm ASTM D5185m >20 | 2 | 0 | 0 |

INFRA-RED

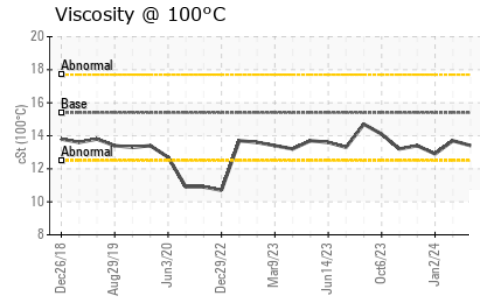
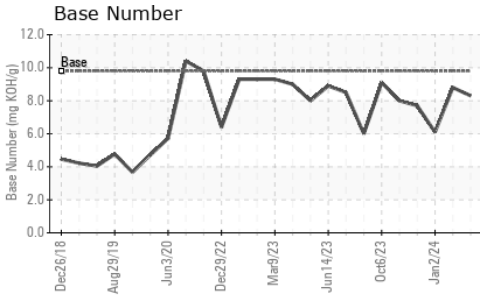
| method | limit/base | current | history1 | history2 |
|-----------|--------------------------|-------------|----------|----------|
| Soot % | % *ASTM D7844 >4 | 0.1 | 0.1 | 0.2 |
| Nitration | Abs/cm *ASTM D7624 >20 | 6.5 | 5.6 | 8.9 |
| Sulfation | Abs/.1mm *ASTM D7415 >30 | 17.7 | 17.5 | 18.5 |

FLUID DEGRADATION

| method | limit/base | current | history1 | history2 |
|------------------|--------------------------|-------------|----------|----------|
| Oxidation | Abs/.1mm *ASTM D7414 >25 | 14.2 | 14.0 | 15.8 |
| Base Number (BN) | mg KOH/g ASTM D2896 9.8 | 8.3 | 8.8 | 6.1 |



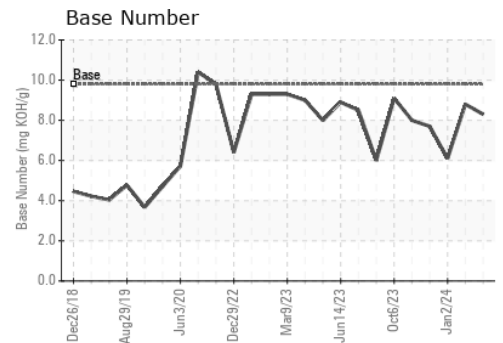
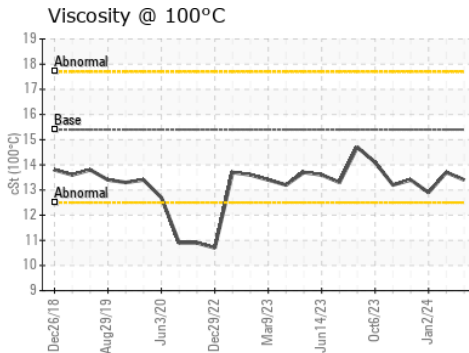
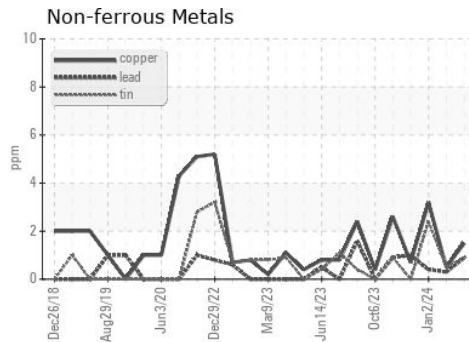
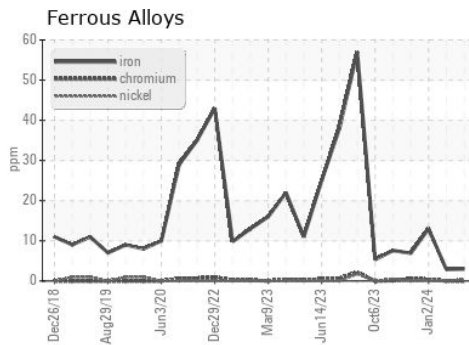
OIL ANALYSIS REPORT



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

| FLUID PROPERTIES | method | limit/base | current | history1 | history2 | |
|------------------|--------|------------|---------|-------------|----------|------|
| Visc @ 100°C | cSt | ASTM D445 | 15.4 | 13.4 | 13.7 | 12.9 |

GRAPHS



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0109824
Lab Number : 06091490
Unique Number : 10884343
Test Package : FLEET

Received : 16 Feb 2024
Tested : 17 Feb 2024
Diagnosed : 17 Feb 2024 - Wes Davis

GFL Environmental - 836 - Kansas City Hauling
 7801 East Truman Road
 Kansas City, MO
 US 64126
 Contact: Loyce Stewart
 loyce.stewart@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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F: