



| | |
|-----------------|---------------|
| WEAR | NORMAL |
| CONTAMINATION | NORMAL |
| FLUID CONDITION | NORMAL |



Machine Id
426139 - SW4630
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (--- GAL)

RECOMMENDATION

Resample at the next service interval to monitor. (Customer Sample Comment: Engine)

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|----------------|-----|-------------|-----------|--------------------|-------------|-------------|
| Sample Number | | Client Info | | GFL0128763 | GFL0105515 | GFL0105531 |
| Sample Date | | Client Info | | 10 Jul 2024 | 11 Jan 2024 | 20 Dec 2023 |
| Machine Age | mls | Client Info | | 227368 | 227361 | 226266 |
| Oil Age | mls | Client Info | | 227368 | 227361 | 217792 |
| Filter Age | mls | Client Info | | 227368 | 0 | 226266 |
| Oil Changed | | Client Info | | Not Chngd | Changed | Changed |
| Filter Changed | | Client Info | | Not Chngd | Changed | Changed |
| Sample Status | | | | NORMAL | NORMAL | NORMAL |

WEAR

All component wear rates are normal.

| | | | | | | |
|--------------|--------|-------------|------|--------------|------|------|
| Iron | ppm | ASTM D5185m | >80 | 11 | 20 | 51 |
| Chromium | ppm | ASTM D5185m | >5 | <1 | <1 | 2 |
| Nickel | ppm | ASTM D5185m | >2 | 0 | 0 | <1 |
| Titanium | ppm | ASTM D5185m | | 0 | 0 | 0 |
| Silver | ppm | ASTM D5185m | >3 | 0 | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >30 | 3 | 1 | 3 |
| Lead | ppm | ASTM D5185m | >30 | 0 | 0 | 0 |
| Copper | ppm | ASTM D5185m | >150 | 12 | 3 | 9 |
| Tin | ppm | ASTM D5185m | >5 | 0 | <1 | 0 |
| Vanadium | ppm | ASTM D5185m | | 0 | <1 | 0 |
| White Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | NONE | NONE | NONE |

CONTAMINATION

There is no indication of any contamination in the oil.

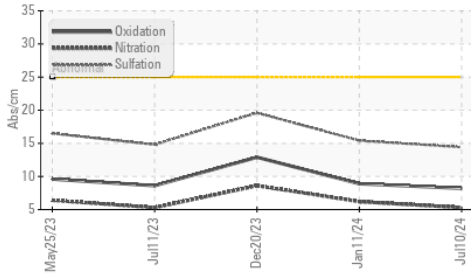
| | | | | | | |
|------------------|----------|-------------|-------|----------------|-------|-------|
| Silicon | ppm | ASTM D5185m | >20 | 8 | 9 | 14 |
| Potassium | ppm | ASTM D5185m | >20 | 2 | 2 | 3 |
| Fuel | | WC Method | >5 | <1.0 | <1.0 | <1.0 |
| Water | | WC Method | >0.2 | NEG | NEG | NEG |
| Glycol | | WC Method | | NEG | NEG | NEG |
| Soot % | % | *ASTM D7844 | >3 | 0.1 | 0.2 | 0.4 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | 5.3 | 6.2 | 8.6 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | 14.4 | 15.4 | 19.6 |
| Silt | scalar | *Visual | NONE | NONE | NONE | NONE |
| Debris | scalar | *Visual | NONE | NONE | NONE | NONE |
| Sand/Dirt | scalar | *Visual | NONE | NONE | NONE | NONE |
| Appearance | scalar | *Visual | NORML | NORML | NORML | NORML |
| Odor | scalar | *Visual | NORML | NORML | NORML | NORML |
| Emulsified Water | scalar | *Visual | >0.2 | NEG | NEG | NEG |

FLUID CONDITION

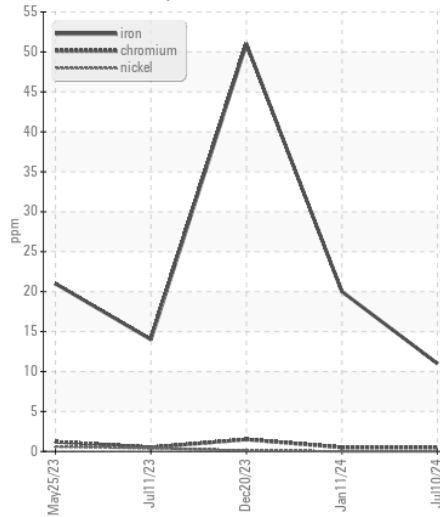
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

| | | | | | | |
|------------------|----------|-------------|------|-------------|------|------|
| Sodium | ppm | ASTM D5185m | | 0 | 1 | 0 |
| Boron | ppm | ASTM D5185m | 0 | 0 | 0 | 0 |
| Barium | ppm | ASTM D5185m | 0 | 0 | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | 60 | 51 | 51 | 39 |
| Manganese | ppm | ASTM D5185m | 0 | 0 | <1 | <1 |
| Magnesium | ppm | ASTM D5185m | 1010 | 30 | 37 | 11 |
| Calcium | ppm | ASTM D5185m | 1070 | 2490 | 2272 | 2314 |
| Phosphorus | ppm | ASTM D5185m | 1150 | 981 | 1127 | 893 |
| Zinc | ppm | ASTM D5185m | 1270 | 1263 | 1302 | 1140 |
| Sulfur | ppm | ASTM D5185m | 2060 | 3015 | 3222 | 3054 |
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | 8.2 | 8.9 | 12.9 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 9.8 | 9.7 | 8.3 | 6.3 |
| Visc @ 100°C | cSt | ASTM D445 | 15.4 | 13.1 | 13.4 | 15.3 |

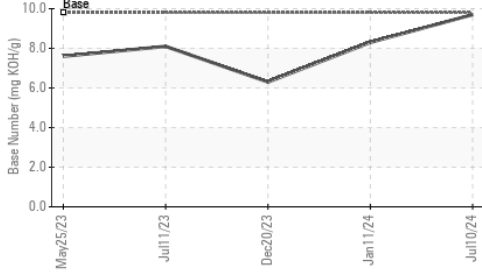
FT-IR (Direct Trend)



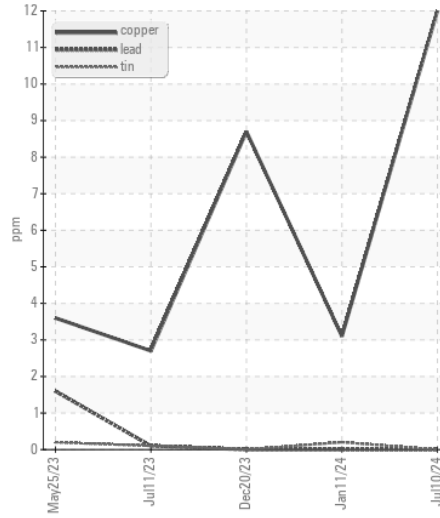
Ferrous Alloys



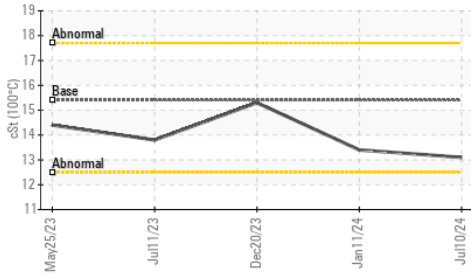
Base Number



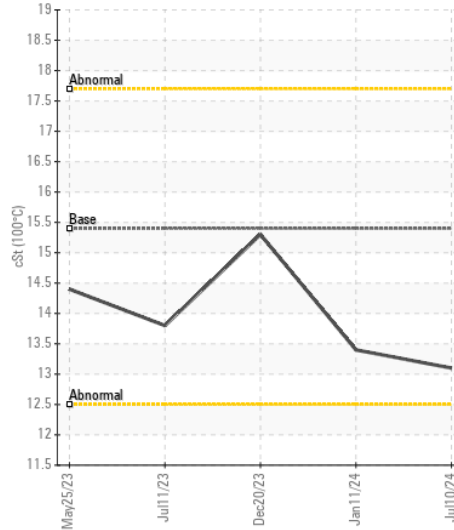
Non-ferrous Metals



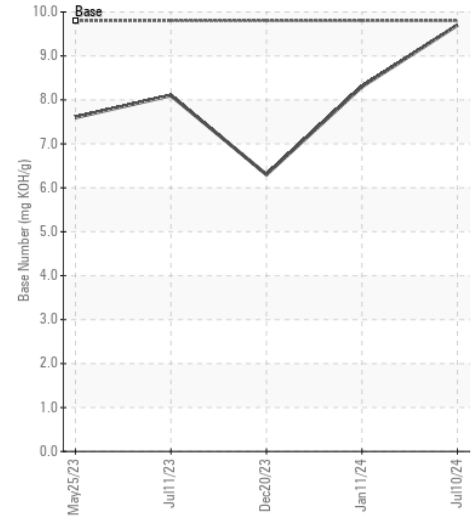
Viscosity @ 100°C



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513

Sample No. : GFL0128763

Lab Number : 06237611

Unique Number : 11126445

Test Package : FLEET

Received : 16 Jul 2024

Tested : 17 Jul 2024

Diagnosed : 18 Jul 2024 - Don Baldrige

GFL Environmental - 983 - Sugar Land Hauling

16011 West Belfort Street

Sugar Land, TX

US 77498

Contact: Adrian Martinez

adrianmartinez@gflenv.com

T:

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)