



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



Area
(51464R)
Machine Id
712051
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (--- GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|----------------|-----|-------------|-----------|--------------------|-------------|-------------|
| Sample Number | | Client Info | | GFL0119946 | GFL0119949 | GFL0103556 |
| Sample Date | | Client Info | | 09 Jul 2024 | 25 Jun 2024 | 27 Mar 2024 |
| Machine Age | hrs | Client Info | | 4697 | 4641 | 4085 |
| Oil Age | hrs | Client Info | | 4085 | 0 | 0 |
| Filter Age | hrs | Client Info | | 4085 | 0 | 0 |
| Oil Changed | | Client Info | | Changed | Not Changd | Changed |
| Filter Changed | | Client Info | | Changed | Not Changed | Changed |
| Sample Status | | | | NORMAL | NORMAL | NORMAL |

WEAR

All component wear rates are normal.

| | | | | | | |
|--------------|--------|-------------|------|--------------|------|------|
| Iron | ppm | ASTM D5185m | >120 | 18 | 8 | 12 |
| Chromium | ppm | ASTM D5185m | >20 | <1 | <1 | <1 |
| Nickel | ppm | ASTM D5185m | >5 | 1 | 0 | 4 |
| Titanium | ppm | ASTM D5185m | >2 | <1 | <1 | 0 |
| Silver | ppm | ASTM D5185m | >2 | <1 | <1 | 0 |
| Aluminum | ppm | ASTM D5185m | >20 | 2 | 1 | 1 |
| Lead | ppm | ASTM D5185m | >40 | <1 | 0 | 0 |
| Copper | ppm | ASTM D5185m | >330 | 1 | <1 | <1 |
| Tin | ppm | ASTM D5185m | >15 | <1 | 0 | <1 |
| Vanadium | ppm | ASTM D5185m | | <1 | <1 | <1 |
| 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.

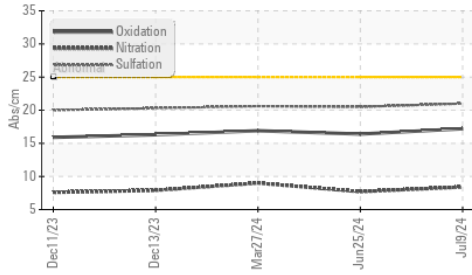
| | | | | | | |
|------------------|----------|-------------|-------|----------------|-------|-------|
| Silicon | ppm | ASTM D5185m | >25 | 4 | 3 | 3 |
| Potassium | ppm | ASTM D5185m | >20 | 2 | 1 | 2 |
| Fuel | | WC Method | >3.0 | <1.0 | <1.0 | <1.0 |
| Water | | WC Method | >0.2 | NEG | NEG | NEG |
| Glycol | | WC Method | | NEG | NEG | NEG |
| Soot % | % | *ASTM D7844 | >4 | 0.5 | 0.4 | 0.6 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | 8.4 | 7.7 | 9.0 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | 21.0 | 20.5 | 20.6 |
| 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

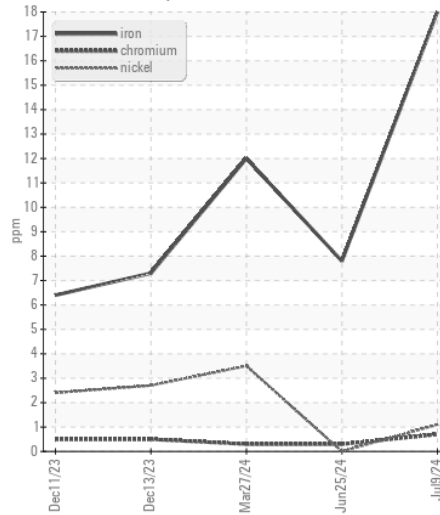
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

| | | | | | | |
|------------------|----------|-------------|------|-------------|------|------|
| Sodium | ppm | ASTM D5185m | | 5 | 2 | 3 |
| Boron | ppm | ASTM D5185m | 0 | 2 | 1 | 6 |
| Barium | ppm | ASTM D5185m | 0 | 0 | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | 60 | 60 | 63 | 61 |
| Manganese | ppm | ASTM D5185m | 0 | 1 | <1 | <1 |
| Magnesium | ppm | ASTM D5185m | 1010 | 946 | 1129 | 987 |
| Calcium | ppm | ASTM D5185m | 1070 | 1070 | 1234 | 1122 |
| Phosphorus | ppm | ASTM D5185m | 1150 | 1005 | 1133 | 1019 |
| Zinc | ppm | ASTM D5185m | 1270 | 1223 | 1535 | 1267 |
| Sulfur | ppm | ASTM D5185m | 2060 | 2689 | 3925 | 3281 |
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | 17.2 | 16.4 | 16.9 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 9.8 | 7.3 | 7.5 | 6.6 |
| Visc @ 100°C | cSt | ASTM D445 | 15.4 | 13.9 | 13.8 | 13.8 |

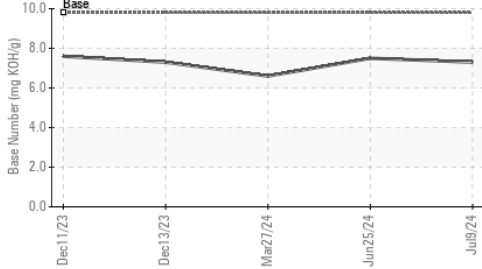
FT-IR (Direct Trend)



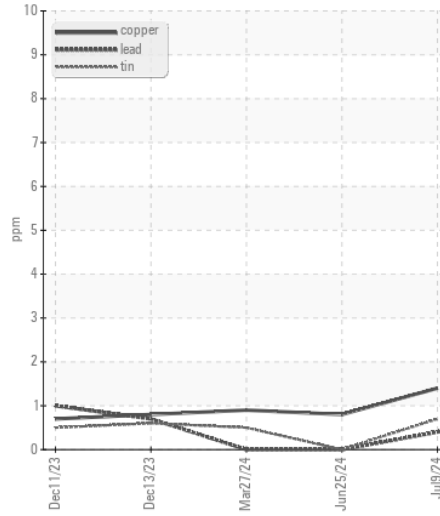
Ferrous Alloys



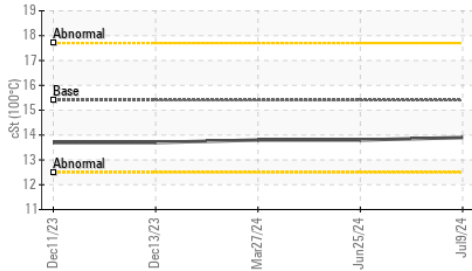
Base Number



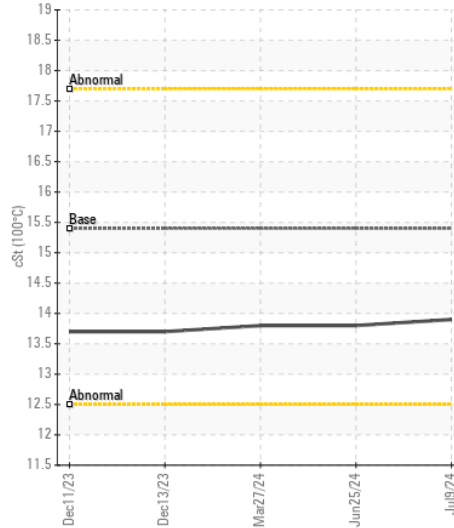
Non-ferrous Metals



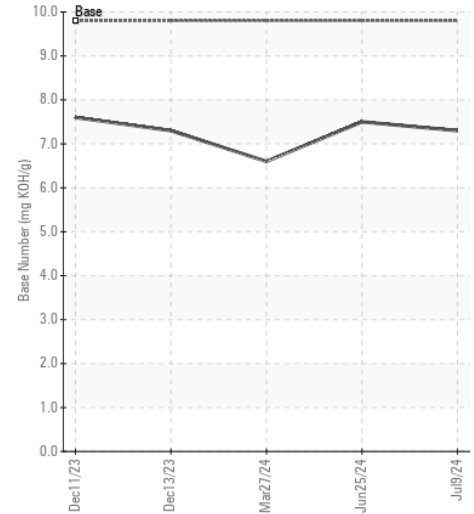
Viscosity @ 100°C



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0119946
Lab Number : 06238680
Unique Number : 11127514
Test Package : FLEET

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

GFL Environmental - 958A - Chillicothe Wigan
 19908 N. State Rd 29
 Chillicothe, IL
 US 61523
 Contact: Bryan Link
 blink@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: