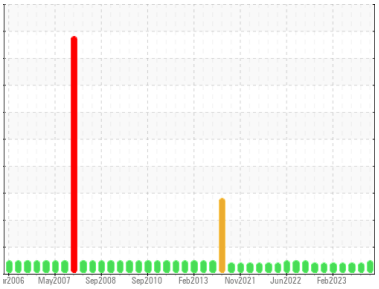
# OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL

Machine Id
## CATERPILLAR 12G 8318 (S/N 61M12623)
Component
**Diesel Engine**
Fluid
**PETRO CANADA DURON XL SYN BLEND 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 | | **WC0816317** | WC0755201 | WC0797685 |
| Sample Date | | Client Info | | **17 Jul 2023** | 30 May 2023 | 25 Apr 2023 |
| Machine Age | hrs | Client Info | | **11311** | 10918 | 10347 |
| Oil Age | hrs | Client Info | | **393** | 571 | 446 |
| Oil Changed | | Client Info | | **Changed** | Changed | Changed |
| Sample Status | | | | **NORMAL** | ATTENTION | ATTENTION |

| CONTAMINATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Fuel | | WC Method | >5 | **<1.0** | <1.0 | <1.0 |
| Glycol | | WC Method | | **NEG** | NEG | NEG |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185m | >105 | **9** | 7 | 8 |
| Chromium | ppm | ASTM D5185m | >5 | **<1** | 0 | <1 |
| Nickel | ppm | ASTM D5185m | >4 | **0** | 0 | <1 |
| Titanium | ppm | ASTM D5185m | >2 | **0** | 0 | 0 |
| Silver | ppm | ASTM D5185m | >2 | **0** | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >10 | **3** | 0 | 1 |
| Lead | ppm | ASTM D5185m | >15 | **0** | 1 | <1 |
| Copper | ppm | ASTM D5185m | >140 | **1** | 2 | 1 |
| Tin | ppm | ASTM D5185m | >4 | **<1** | <1 | <1 |
| 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 | 1 | **4** | 2 | 5 |
| Barium | ppm | ASTM D5185m | 1 | **<1** | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | 60 | **65** | 61 | 60 |
| Manganese | ppm | ASTM D5185m | 1 | **<1** | <1 | <1 |
| Magnesium | ppm | ASTM D5185m | 1010 | **990** | 937 | 953 |
| Calcium | ppm | ASTM D5185m | 1070 | **1166** | 1140 | 1149 |
| Phosphorus | ppm | ASTM D5185m | 1150 | **1090** | 1008 | 1025 |
| Zinc | ppm | ASTM D5185m | 1270 | **1327** | 1234 | 1268 |
| Sulfur | ppm | ASTM D5185m | 2060 | **3843** | 3581 | 3509 |

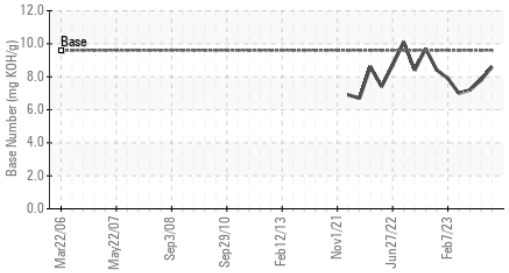
| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | >25 | **4** | 4 | 3 |
| Sodium | ppm | ASTM D5185m | | **18** | 22 | 3 |
| Potassium | ppm | ASTM D5185m | >20 | **3** | 3 | 2 |

| INFRA-RED | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Soot % | % | *ASTM D7844 | >3 | **0.4** | 0.4 | 0.3 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | **7.8** | 9.0 | 7.7 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | **18.8** | 19.8 | 17.4 |

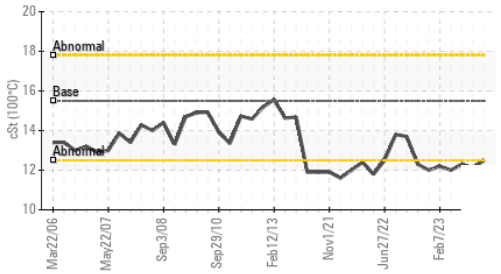
| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | **14.4** | 15.9 | 14.8 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 9.6 | **8.6** | 7.8 | 7.2 |

# OIL ANALYSIS REPORT

Base Number




Viscosity @ 100°C

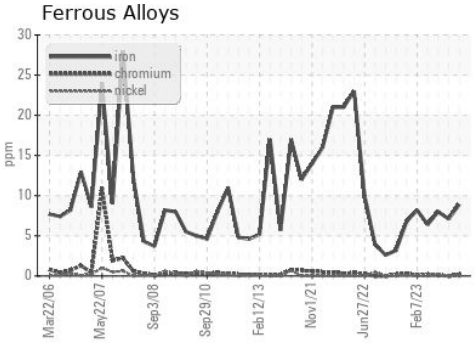



| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| 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 |
| Free Water | scalar | *Visual | | **NEG** | NEG | NEG |

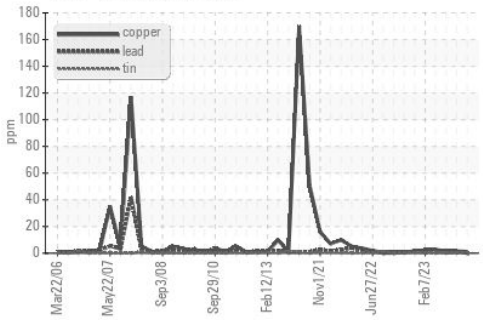
| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 100°C | cSt | ASTM D445 | 15.5 | **12.5** | ▲ 12.1 | ▲ 12.3 |

## GRAPHS

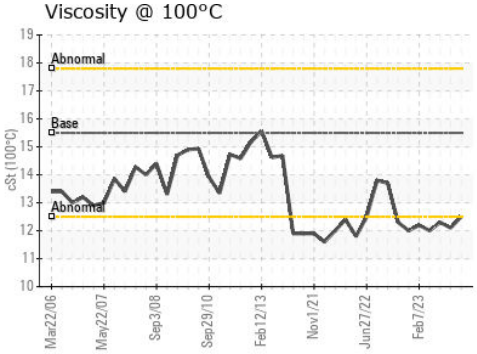
Ferrous Alloys



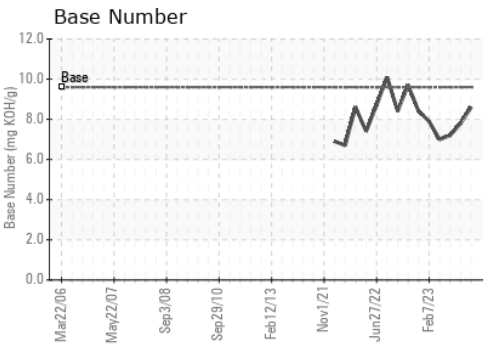

Non-ferrous Metals




Viscosity @ 100°C




Base Number




Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : WC0816317 **Received** : 24 Jul 2023
**Lab Number** : 05905223 **Diagnosed** : 24 Jul 2023
**Unique Number** : 10566579 **Diagnostician** : Wes Davis
**Test Package** : CONST ( Additional Tests: TBN )

*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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