



OIL ANALYSIS REPORT

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

Machine Id
X53 (S/N NJ2642)
 Component
Diesel Engine
 Fluid
VALVOLINE PREMIUM BLUE 2000 15W40 (--- GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|----------------|-----|-------------|-----------|--------------------|-------------|-------------|
| Sample Number | | Client Info | | WC0849037 | WC0793089 | WC0731573 |
| Sample Date | | Client Info | | 15 Nov 2023 | 03 Apr 2023 | 10 Sep 2022 |
| Machine Age | hrs | Client Info | | 3607 | 1838 | 831 |
| Oil Age | hrs | Client Info | | 887 | 1007 | 831 |
| Filter Age | hrs | Client Info | | 887 | 1007 | 831 |
| Oil Changed | | Client Info | | Changed | Changed | Changed |
| Filter Changed | | Client Info | | Changed | Changed | Changed |
| Sample Status | | | | NORMAL | ATTENTION | NORMAL |

WEAR

All component wear rates are normal.

| | | | | | | |
|--------------|--------|-------------|------|--------------|------|------|
| Iron | ppm | ASTM D5185m | >100 | 21 | 19 | 47 |
| Chromium | ppm | ASTM D5185m | >20 | 1 | <1 | 2 |
| Nickel | ppm | ASTM D5185m | >4 | 0 | 0 | 0 |
| Titanium | ppm | ASTM D5185m | | <1 | 0 | 0 |
| Silver | ppm | ASTM D5185m | >3 | 0 | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >20 | 5 | 4 | 11 |
| Lead | ppm | ASTM D5185m | >40 | 0 | 0 | 0 |
| Copper | ppm | ASTM D5185m | >330 | 2 | 5 | 24 |
| Tin | ppm | ASTM D5185m | >15 | <1 | <1 | 2 |
| Vanadium | ppm | ASTM D5185m | | 0 | 0 | 0 |
| White Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | NONE | NONE | NONE |

CONTAMINATION

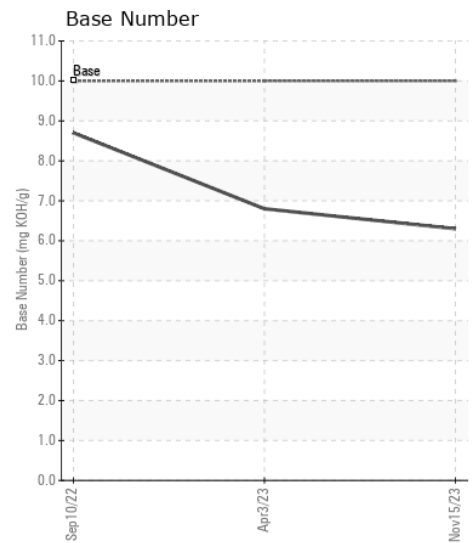
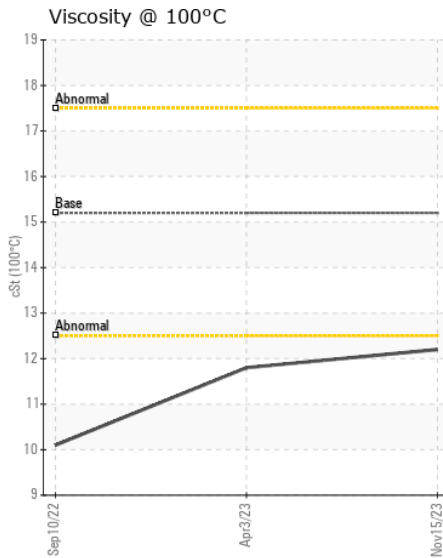
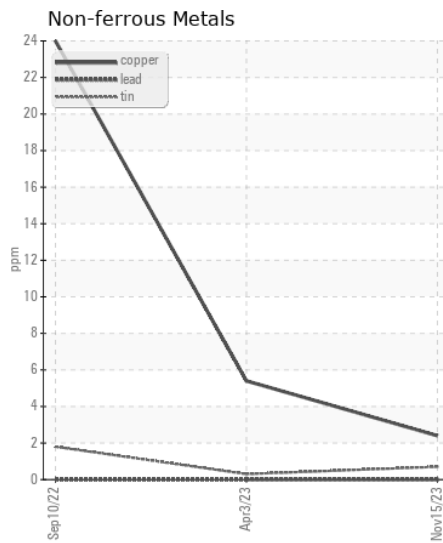
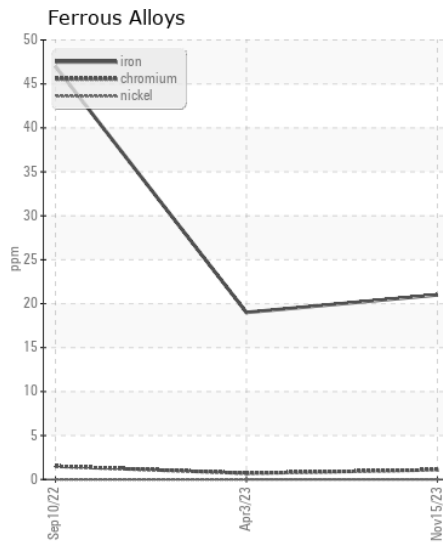
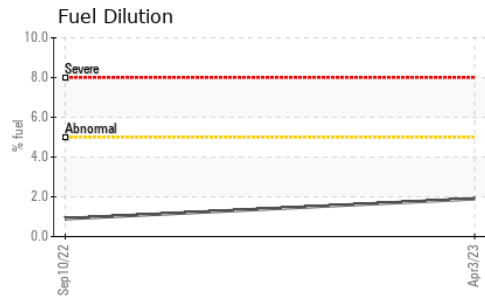
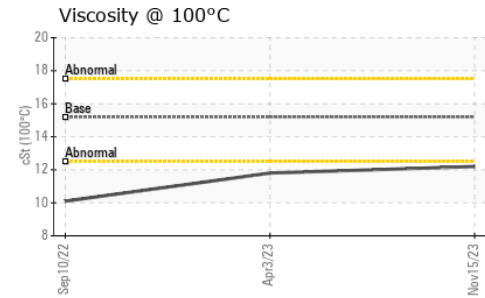
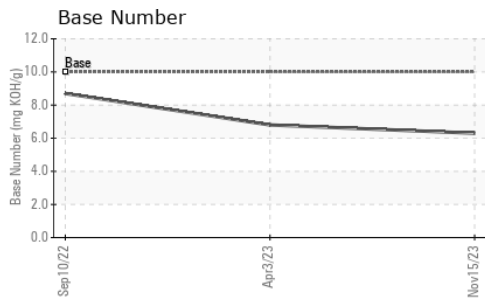
There is no indication of any contamination in the oil.

| | | | | | | |
|------------------|----------|-------------|-------|----------------|-------|-------|
| Silicon | ppm | ASTM D5185m | >25 | 5 | 4 | 11 |
| Potassium | ppm | ASTM D5185m | >20 | 4 | 6 | 21 |
| Fuel | % | ASTM D3524 | >5 | <1.0 | 1.9 | 0.9 |
| Water | | WC Method | >0.2 | NEG | NEG | NEG |
| Glycol | | WC Method | | NEG | NEG | NEG |
| Soot % | % | *ASTM D7844 | >3 | 0.6 | 0.4 | 0.3 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | 11.4 | 11.1 | 11.3 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | 22.1 | 21.3 | 23.5 |
| 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 | 4 | 5 |
| Boron | ppm | ASTM D5185m | | 23 | 35 | 31 |
| Barium | ppm | ASTM D5185m | | 0 | 0 | 1 |
| Molybdenum | ppm | ASTM D5185m | | 91 | 57 | 36 |
| Manganese | ppm | ASTM D5185m | | <1 | 2 | 8 |
| Magnesium | ppm | ASTM D5185m | | 689 | 760 | 515 |
| Calcium | ppm | ASTM D5185m | | 1199 | 1256 | 1630 |
| Phosphorus | ppm | ASTM D5185m | | 640 | 688 | 685 |
| Zinc | ppm | ASTM D5185m | | 827 | 830 | 848 |
| Sulfur | ppm | ASTM D5185m | | 2193 | 2843 | 2361 |
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | 21.5 | 20.8 | 23.3 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 10.0 | 6.3 | 6.8 | 8.7 |
| Visc @ 100°C | cSt | ASTM D445 | 15.2 | 12.2 | 11.8 | 10.1 |



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0849037 **Received** : 21 Nov 2023
Lab Number : 06014467 **Tested** : 22 Nov 2023
Unique Number : 10753611 **Diagnosed** : 22 Nov 2023 - Jonathan Hester
Test Package : CONST (Additional Tests: FuelDilution, 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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