



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



Machine Id
2016

Component
Diesel Engine

Fluid
JOHN DEERE ENGINE OIL PLUS 50 II 15W40 (--- GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|----------------|-----|-------------|-----------|--------------------|-------------|-------------|
| Sample Number | | Client Info | | JR0195381 | JR0184576 | JR0169538 |
| Sample Date | | Client Info | | 20 Feb 2024 | 10 Nov 2023 | 06 Jul 2023 |
| Machine Age | hrs | Client Info | | 4163 | 3663 | 2987 |
| Oil Age | hrs | Client Info | | 4000 | 500 | 1000 |
| Filter Age | hrs | Client Info | | 4000 | 500 | 1000 |
| Oil Changed | | Client Info | | Changed | Changed | Changed |
| Filter Changed | | Client Info | | Changed | Changed | Changed |
| Sample Status | | | | NORMAL | NORMAL | NORMAL |

WEAR

All component wear rates are normal.

| | | | | | | |
|--------------|--------|-------------|------|--------------|------|------|
| Iron | ppm | ASTM D5185m | >51 | 12 | 8 | 10 |
| Chromium | ppm | ASTM D5185m | >11 | <1 | <1 | <1 |
| Nickel | ppm | ASTM D5185m | >5 | 7 | 4 | 2 |
| Titanium | ppm | ASTM D5185m | | <1 | 0 | 0 |
| Silver | ppm | ASTM D5185m | >3 | 0 | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >31 | 2 | 5 | 2 |
| Lead | ppm | ASTM D5185m | >26 | <1 | 0 | 0 |
| Copper | ppm | ASTM D5185m | >26 | 1 | <1 | 0 |
| Tin | ppm | ASTM D5185m | >4 | <1 | 0 | <1 |
| Vanadium | ppm | ASTM D5185m | | <1 | <1 | 0 |
| White Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | NONE | NONE | NONE |

CONTAMINATION

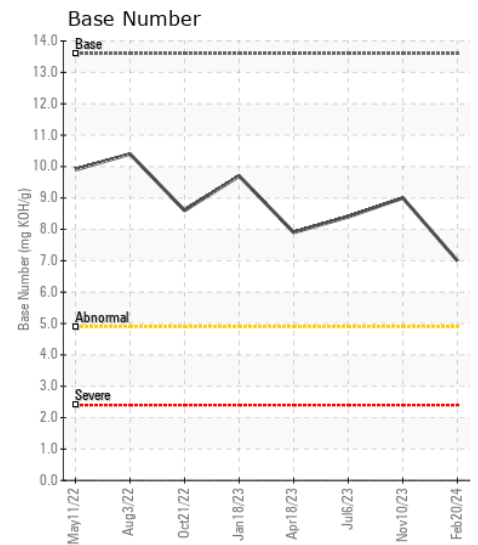
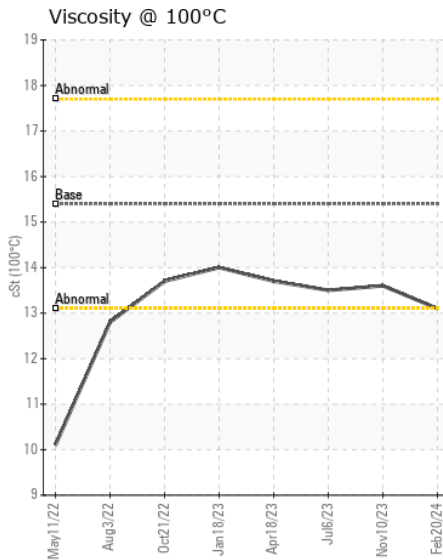
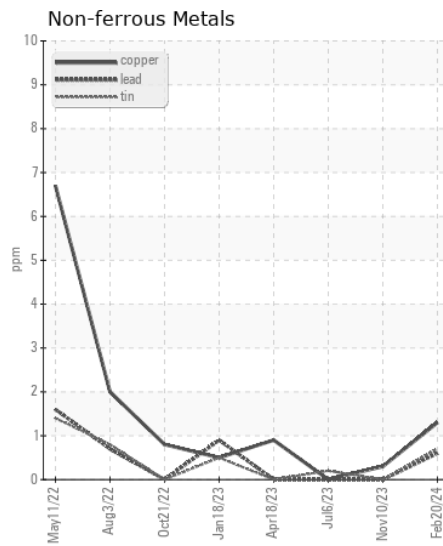
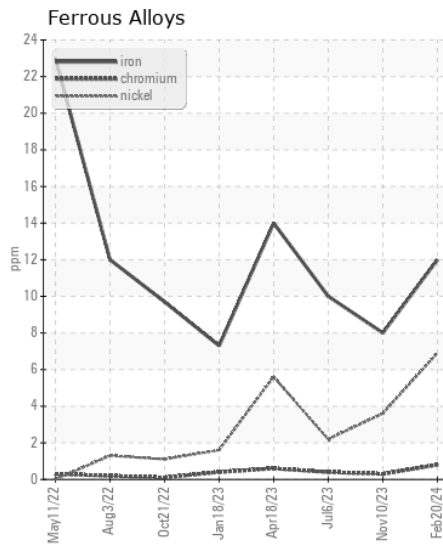
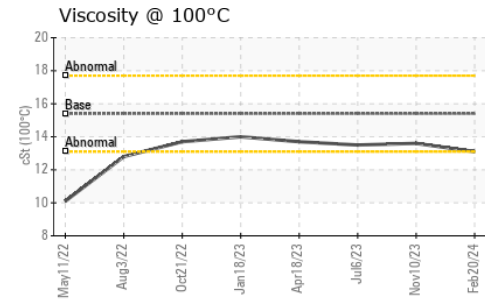
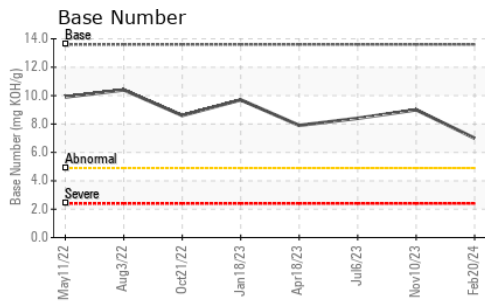
There is no indication of any contamination in the oil.

| | | | | | | |
|------------------|----------|-------------|-------|----------------|-------|-------|
| Silicon | ppm | ASTM D5185m | >22 | 5 | 6 | 11 |
| Potassium | ppm | ASTM D5185m | >20 | 2 | 2 | <1 |
| Fuel | | WC Method | >2.1 | <1.0 | <1.0 | <1.0 |
| Water | | WC Method | >0.21 | NEG | NEG | NEG |
| Glycol | | WC Method | | NEG | NEG | NEG |
| Soot % | % | *ASTM D7844 | >3 | 0.2 | 0.2 | 0.1 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | 6.7 | 7.8 | 7.1 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | 17.3 | 21.1 | 19.0 |
| 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 | >0.21 | 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 | >31 | <1 | 2 | 1 |
| Boron | ppm | ASTM D5185m | | 34 | 239 | 200 |
| Barium | ppm | ASTM D5185m | | 0 | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | | 43 | 239 | 173 |
| Manganese | ppm | ASTM D5185m | | <1 | <1 | <1 |
| Magnesium | ppm | ASTM D5185m | | 155 | 760 | 578 |
| Calcium | ppm | ASTM D5185m | | 2220 | 1392 | 1862 |
| Phosphorus | ppm | ASTM D5185m | | 923 | 915 | 922 |
| Zinc | ppm | ASTM D5185m | | 1094 | 1107 | 1153 |
| Sulfur | ppm | ASTM D5185m | | 4092 | 3203 | 4177 |
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | 10.5 | 15.2 | 12.9 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 13.6 | 7.0 | 9.0 | 8.4 |
| Visc @ 100°C | cSt | ASTM D445 | 15.4 | 13.1 | 13.6 | 13.5 |



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : JR0195381 **Received** : 20 Mar 2024
Lab Number : 06123493 **Tested** : 21 Mar 2024
Unique Number : 10937644 **Diagnosed** : 22 Mar 2024 - Don Baldrige
Test Package : CONST (Additional Tests: TBN)

PATRIOT DEVELOPMENT CORP
 22721 LADBROOK DRIVE STE 120
 STERLING, VA
 US 20166
 Contact: ROBERT MOSS
 robert.moss@patriotdev.net

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: