



Machine Id
JOHN DEERE 331G NUTRIDENSE 331G (S/N 1T0331GMPJF333927)
 Component
Rear Center Diesel Engine
 Fluid
JOHN DEERE ENGINE OIL PLUS 50 II 15W40 (3 GAL)

RECOMMENDATION

We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. We recommend an early resample to monitor this condition.

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|----------------|-----|-------------|-----------|-------------|----------|----------|
| Sample Number | | Client Info | | JR0106792 | --- | --- |
| Sample Date | | Client Info | | 12 Jan 2024 | --- | --- |
| Machine Age | hrs | Client Info | | 2500 | --- | --- |
| Oil Age | hrs | Client Info | | 500 | --- | --- |
| Filter Age | hrs | Client Info | | 500 | --- | --- |
| Oil Changed | | Client Info | | Diff Oil | --- | --- |
| Filter Changed | | Client Info | | Changed | --- | --- |
| Sample Status | | | | SEVERE | --- | --- |

WEAR

The copper level is abnormal. In the absence of other significant wear metals, suspect copper due to sources other than wear (i.e. cooling core). All other component wear rates are normal.

| | | | | | | |
|--------------|--------|-------------|------|-------|-----|-----|
| Iron | ppm | ASTM D5185m | >80 | 47 | --- | --- |
| Chromium | ppm | ASTM D5185m | >6 | <1 | --- | --- |
| Nickel | ppm | ASTM D5185m | >2 | <1 | --- | --- |
| Titanium | ppm | ASTM D5185m | >2 | <1 | --- | --- |
| Silver | ppm | ASTM D5185m | >2 | <1 | --- | --- |
| Aluminum | ppm | ASTM D5185m | >20 | ▲ 8 | --- | --- |
| Lead | ppm | ASTM D5185m | >95 | 1 | --- | --- |
| Copper | ppm | ASTM D5185m | >85 | ▲ 135 | --- | --- |
| Tin | ppm | ASTM D5185m | >9 | 1 | --- | --- |
| Vanadium | ppm | ASTM D5185m | | <1 | --- | --- |
| White Metal | scalar | *Visual | NONE | NONE | --- | --- |
| Yellow Metal | scalar | *Visual | NONE | NONE | --- | --- |

CONTAMINATION

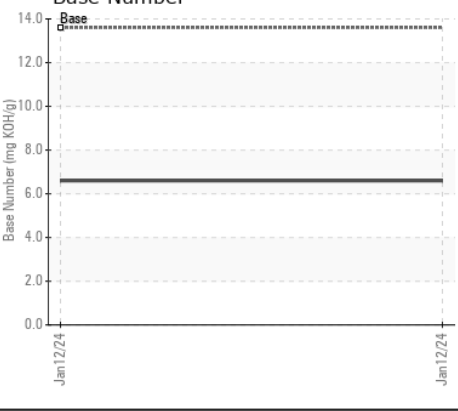
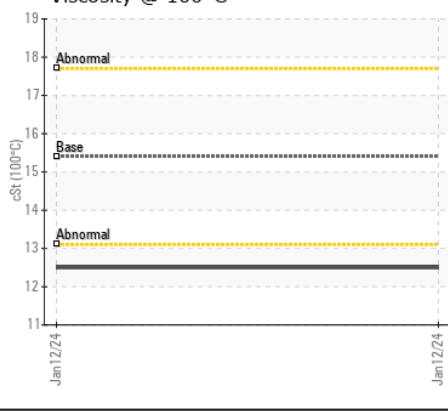
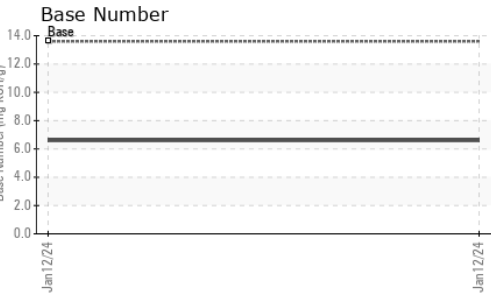
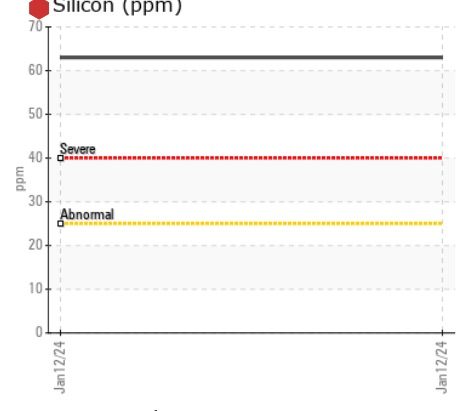
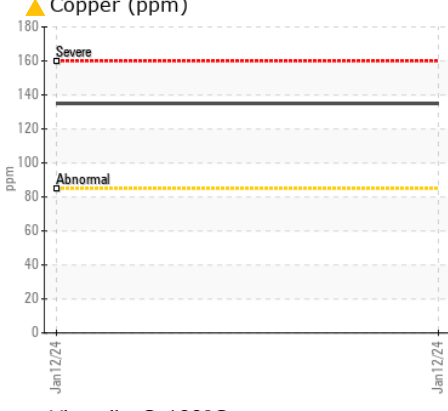
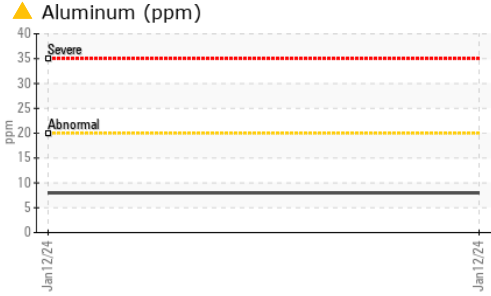
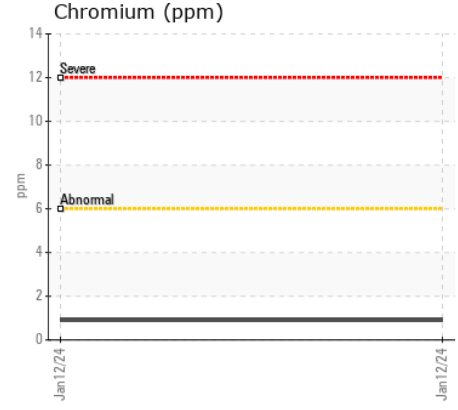
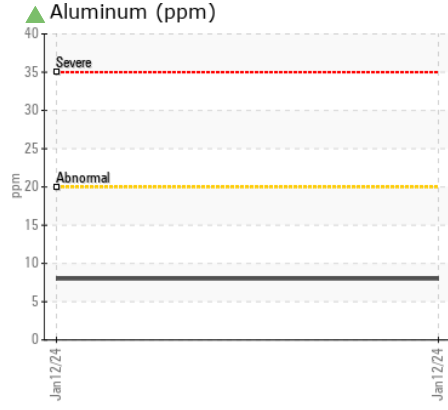
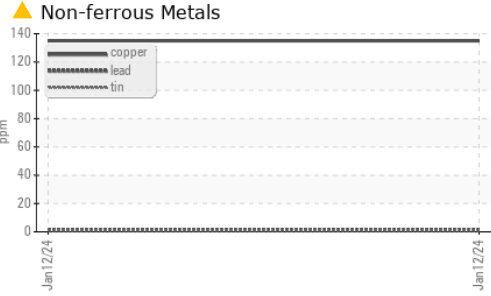
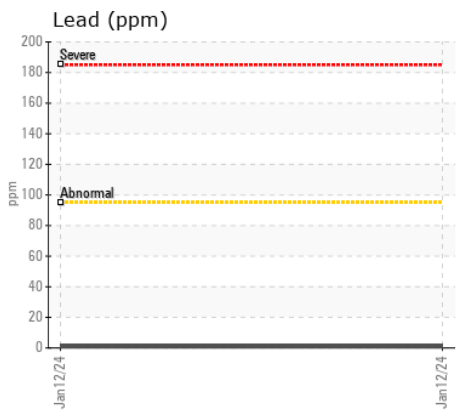
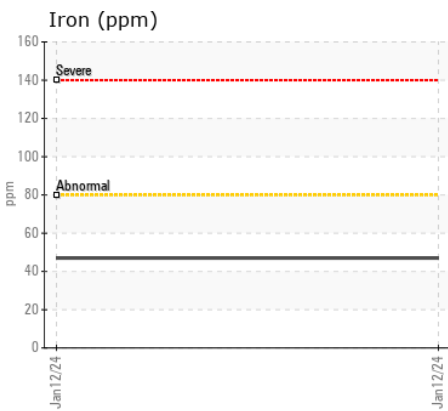
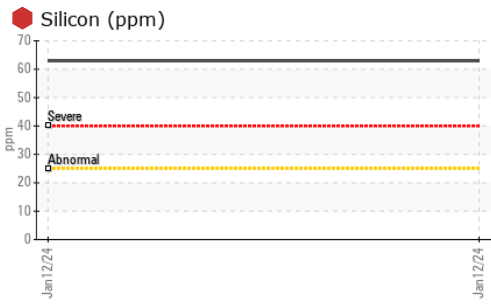
Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress.

| | | | | | | |
|------------------|----------|-------------|-------|-------|-----|-----|
| Silicon | ppm | ASTM D5185m | >25 | ◆ 63 | --- | --- |
| Potassium | ppm | ASTM D5185m | >20 | 3 | --- | --- |
| Fuel | % | ASTM D3524 | >4.0 | <1.0 | --- | --- |
| Water | | WC Method | >0.1 | NEG | --- | --- |
| Glycol | | WC Method | | NEG | --- | --- |
| Soot % | % | *ASTM D7844 | | 0.4 | --- | --- |
| Nitration | Abs/cm | *ASTM D7624 | >20 | 12.6 | --- | --- |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | 29.0 | --- | --- |
| Silt | scalar | *Visual | NONE | NONE | --- | --- |
| Debris | scalar | *Visual | NONE | NONE | --- | --- |
| Sand/Dirt | scalar | *Visual | NONE | NONE | --- | --- |
| Appearance | scalar | *Visual | NORML | NORML | --- | --- |
| Odor | scalar | *Visual | NORML | NORML | --- | --- |
| Emulsified Water | scalar | *Visual | >0.1 | NEG | --- | --- |

FLUID CONDITION

The BN result indicates that there is suitable alkalinity remaining in the oil.

| | | | | | | |
|------------------|----------|-------------|------|------|-----|-----|
| Sodium | ppm | ASTM D5185m | | 14 | --- | --- |
| Boron | ppm | ASTM D5185m | | 96 | --- | --- |
| Barium | ppm | ASTM D5185m | | 2 | --- | --- |
| Molybdenum | ppm | ASTM D5185m | | 265 | --- | --- |
| Manganese | ppm | ASTM D5185m | | 2 | --- | --- |
| Magnesium | ppm | ASTM D5185m | | 775 | --- | --- |
| Calcium | ppm | ASTM D5185m | | 1811 | --- | --- |
| Phosphorus | ppm | ASTM D5185m | | 891 | --- | --- |
| Zinc | ppm | ASTM D5185m | | 1138 | --- | --- |
| Sulfur | ppm | ASTM D5185m | | 2935 | --- | --- |
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | 28.8 | --- | --- |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 13.6 | 6.6 | --- | --- |
| Visc @ 100°C | cSt | ASTM D445 | 15.4 | 12.5 | --- | --- |



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : JR0106792 **Received** : 17 Jan 2024
Lab Number : 06063301 **Diagnosed** : 19 Jan 2024
Unique Number : 10834683 **Diagnostician** : Don Baldrige
Test Package : MOBCE (Additional Tests: FuelDilution, PercentFuel, TBN)

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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)