



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

Machine Id
JOHN DEERE 644 X 1DW644XACPFW18652

Component
Diesel Engine

Fluid
{not provided} (--- GAL)

RECOMMENDATION

Resample at the next service interval to monitor. Please specify the brand, type, and viscosity of the oil on your next sample.

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|----------------|-----|-------------|-----------|--------------------|-------------|-------------|
| Sample Number | | Client Info | | JR0213398 | JR0204806 | JR0194510 |
| Sample Date | | Client Info | | 09 May 2024 | 25 Feb 2024 | 20 Dec 2023 |
| Machine Age | hrs | Client Info | | 2407 | 1695 | 1175 |
| Oil Age | hrs | Client Info | | 0 | 0 | 0 |
| Filter Age | hrs | Client Info | | 0 | 0 | 0 |
| Oil Changed | | Client Info | | N/A | N/A | N/A |
| Filter Changed | | Client Info | | N/A | N/A | N/A |
| Sample Status | | | | NORMAL | NORMAL | ABNORMAL |

WEAR

All component wear rates are normal.

| | | | | | | |
|--------------|--------|-------------|------|--------------|------|------|
| Iron | ppm | ASTM D5185m | >51 | 13 | 9 | 17 |
| Chromium | ppm | ASTM D5185m | >11 | <1 | <1 | 1 |
| Nickel | ppm | ASTM D5185m | >5 | 1 | <1 | 2 |
| Titanium | ppm | ASTM D5185m | | 0 | 0 | <1 |
| Silver | ppm | ASTM D5185m | >3 | 0 | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >31 | 5 | 2 | 10 |
| Lead | ppm | ASTM D5185m | >26 | 1 | 0 | 0 |
| Copper | ppm | ASTM D5185m | >26 | 1 | 6 | 51 |
| Tin | ppm | ASTM D5185m | >4 | <1 | 0 | <1 |
| Vanadium | ppm | ASTM D5185m | | 0 | 0 | <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.

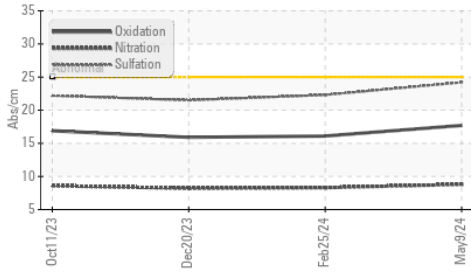
| | | | | | | |
|------------------|----------|-------------|-------|----------------|-------|-------|
| Silicon | ppm | ASTM D5185m | >22 | 13 | 11 | 26 |
| Potassium | ppm | ASTM D5185m | >20 | 3 | 3 | 2 |
| Fuel | | WC Method | >2.1 | <1.0 | <1.0 | <1.0 |
| Water | | WC Method | >0.21 | NEG | NEG | NEG |
| Glycol | | WC Method | | NEG | NEG | NEG |
| Soot % | % | *ASTM D7844 | >3 | 0.6 | 0.4 | 0.4 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | 8.8 | 8.3 | 8.2 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | 24.2 | 22.3 | 21.5 |
| 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 | >0.21 | NEG | NEG | NEG |

FLUID CONDITION

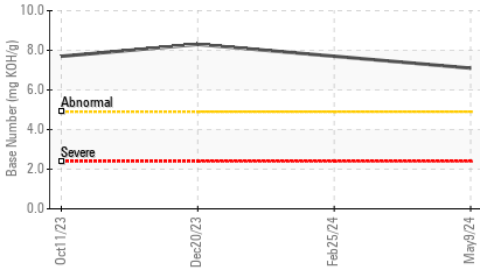
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

| | | | | | | |
|------------------|----------|-------------|-----|--------------|------|------|
| Sodium | ppm | ASTM D5185m | >31 | 3 | 0 | 2 |
| Boron | ppm | ASTM D5185m | | 79 | 172 | 207 |
| Barium | ppm | ASTM D5185m | | 0 | 9 | 0 |
| Molybdenum | ppm | ASTM D5185m | | 227 | 237 | 263 |
| Manganese | ppm | ASTM D5185m | | <1 | 0 | <1 |
| Magnesium | ppm | ASTM D5185m | | 835 | 687 | 842 |
| Calcium | ppm | ASTM D5185m | | 1453 | 1209 | 1384 |
| Phosphorus | ppm | ASTM D5185m | | 929 | 850 | 949 |
| Zinc | ppm | ASTM D5185m | | 1088 | 954 | 1102 |
| Sulfur | ppm | ASTM D5185m | | 3214 | 2776 | 2948 |
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | 17.7 | 16.1 | 15.9 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | | 7.1 | 7.7 | 8.3 |
| Visc @ 100°C | cSt | ASTM D445 | | 13.0 | 12.9 | 13.2 |

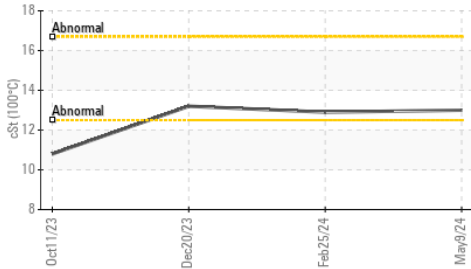
FT-IR (Direct Trend)



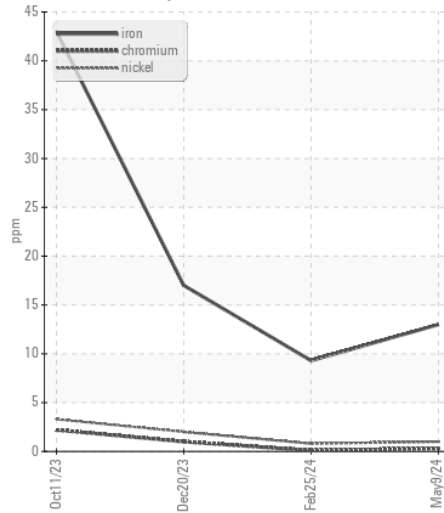
Base Number



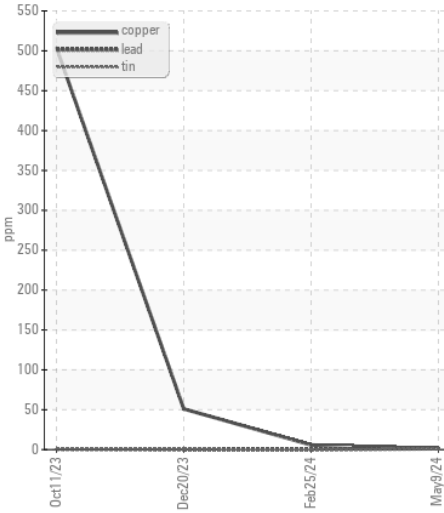
Viscosity @ 100°C



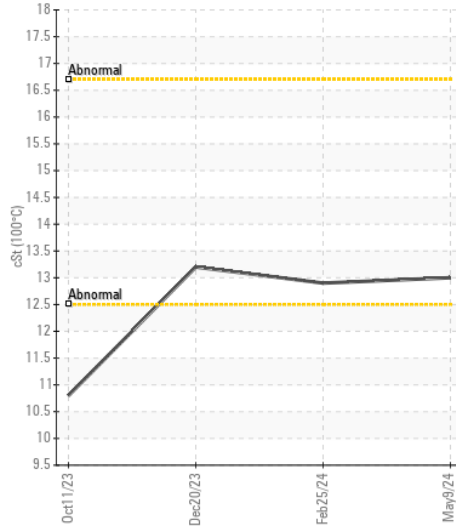
Ferrous Alloys



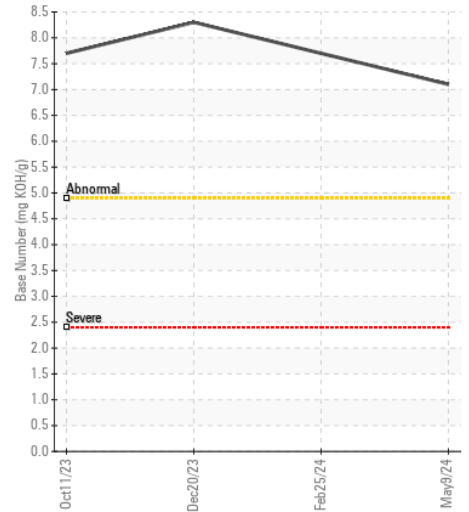
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : JR0213398 **Received** : 10 May 2024
Lab Number : 06175240 **Tested** : 13 May 2024
Unique Number : 11021293 **Diagnosed** : 13 May 2024 - Wes Davis
Test Package : CONST (Additional Tests: 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)