



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

Area

[05W46514]

Machine Id

JOHN DEERE 1FF350GXPKE814131

Component

Diesel Engine

Fluid

JOHN DEERE ENGINE OIL PLUS 50 II 15W40 (7 GAL)

RECOMMENDATION

Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|----------------|-----|-------------|-----------|--------------------|-------------|-------------|
| Sample Number | | Client Info | | JR0214567 | JR0170010 | JR0160450 |
| Sample Date | | Client Info | | 22 May 2024 | 18 Jul 2023 | 25 Jan 2023 |
| Machine Age | hrs | Client Info | | 4980 | 3941 | 3430 |
| Oil Age | hrs | Client Info | | 750 | 0 | 484 |
| Filter Age | hrs | Client Info | | 750 | 0 | 484 |
| Oil Changed | | Client Info | | Changed | Changed | Changed |
| Filter Changed | | Client Info | | Changed | Changed | Changed |
| Sample Status | | | | ABNORMAL | ABNORMAL | ABNORMAL |

WEAR

Cylinder, crank, or cam shaft wear is indicated. All other component wear rates are normal.

| | | | | | | |
|--------------|--------|-------------|------|--------------|------|------|
| Iron | ppm | ASTM D5185m | >51 | ▲ 61 | ▲ 71 | ▲ 69 |
| Chromium | ppm | ASTM D5185m | >11 | 1 | <1 | <1 |
| Nickel | ppm | ASTM D5185m | >5 | ▲ 17 | <1 | 2 |
| Titanium | ppm | ASTM D5185m | | <1 | 0 | 0 |
| Silver | ppm | ASTM D5185m | >3 | <1 | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >31 | 5 | 4 | 4 |
| Lead | ppm | ASTM D5185m | >26 | 3 | 0 | 0 |
| Copper | ppm | ASTM D5185m | >26 | ▲ 96 | 1 | 2 |
| Tin | ppm | ASTM D5185m | >4 | 2 | <1 | <1 |
| Vanadium | ppm | ASTM D5185m | | <1 | 0 | 0 |
| White Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | NONE | NONE | NONE |

CONTAMINATION

Tests indicate that there is no fuel present in the oil. There is no indication of any contamination in the oil.

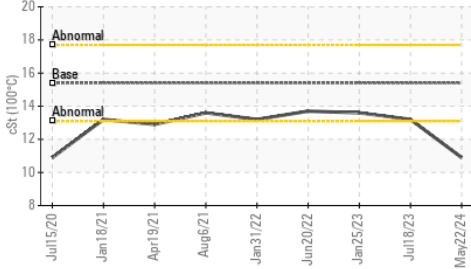
| | | | | | | |
|------------------|----------|-------------|-------|--------------|-------|-------|
| Silicon | ppm | ASTM D5185m | >22 | 9 | 8 | 9 |
| Potassium | ppm | ASTM D5185m | >20 | 6 | 2 | <1 |
| Fuel | % | ASTM D3524 | >2.1 | 0.1 | <1.0 | <1.0 |
| Water | | WC Method | >0.21 | NEG | NEG | NEG |
| Glycol | | WC Method | | NEG | NEG | NEG |
| Soot % | % | *ASTM D7844 | >3 | 0.4 | 0.4 | 0.4 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | 9.1 | 8.9 | 9.1 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | 22.9 | 21.7 | 22.4 |
| 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

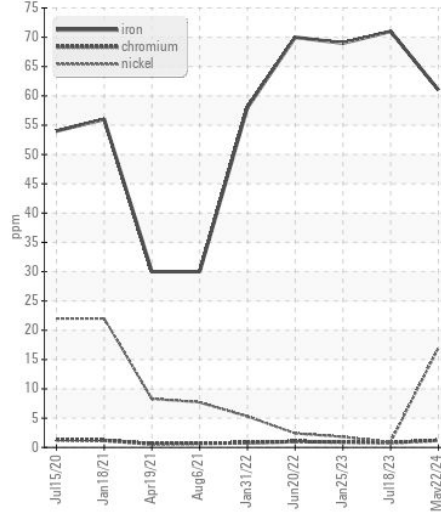
The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

| | | | | | | |
|------------------|----------|-------------|------|---------------|------|------|
| Sodium | ppm | ASTM D5185m | >31 | 6 | 4 | 4 |
| Boron | ppm | ASTM D5185m | | 144 | 174 | 161 |
| Barium | ppm | ASTM D5185m | | 0 | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | | 258 | 228 | 247 |
| Manganese | ppm | ASTM D5185m | | 3 | <1 | <1 |
| Magnesium | ppm | ASTM D5185m | | 810 | 763 | 788 |
| Calcium | ppm | ASTM D5185m | | 1628 | 1642 | 1418 |
| Phosphorus | ppm | ASTM D5185m | | 899 | 924 | 798 |
| Zinc | ppm | ASTM D5185m | | 1090 | 1172 | 969 |
| Sulfur | ppm | ASTM D5185m | | 3149 | 3806 | 3159 |
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | 17.2 | 16.1 | 16.6 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 13.6 | 7.7 | 8.5 | 8.2 |
| Visc @ 100°C | cSt | ASTM D445 | 15.4 | ▲ 10.9 | 13.2 | 13.6 |

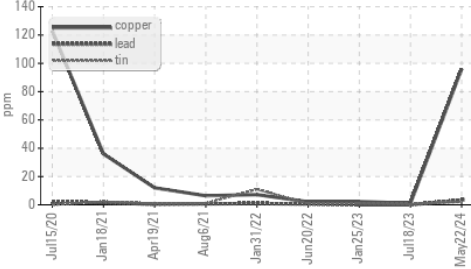
▲ Viscosity @ 100°C



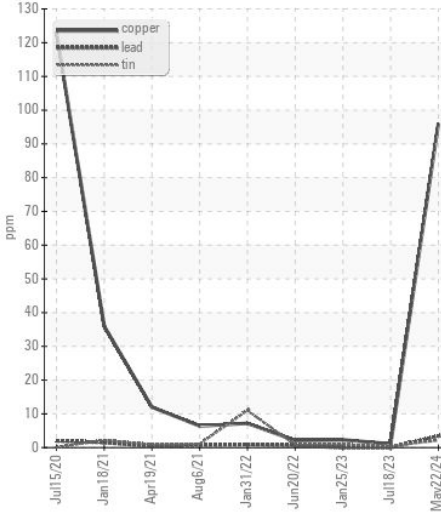
▲ Ferrous Alloys



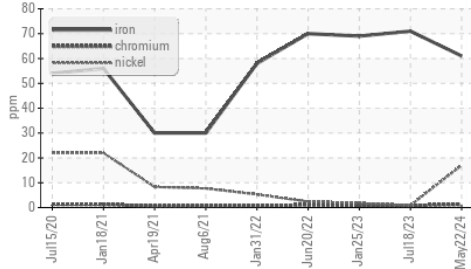
▲ Non-ferrous Metals



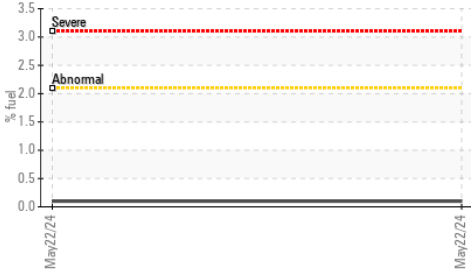
▲ Non-ferrous Metals



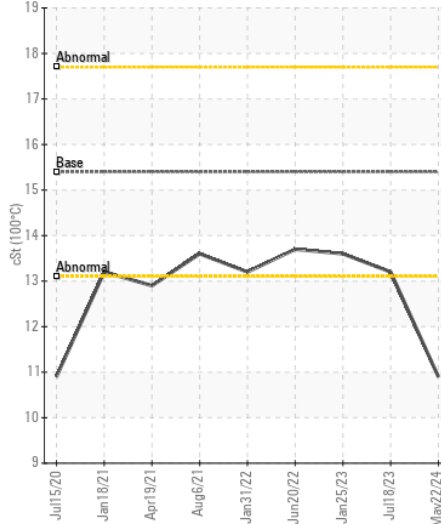
▲ Ferrous Alloys



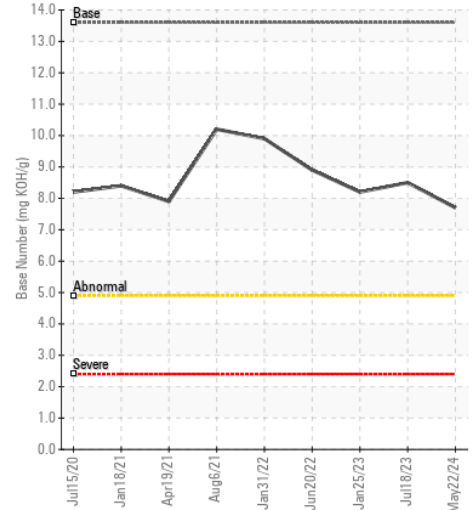
Fuel Dilution



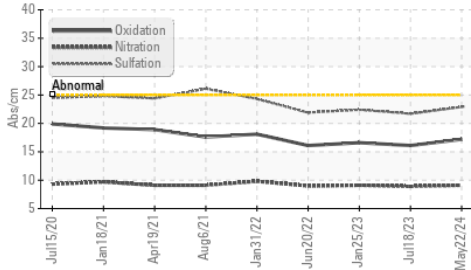
▲ Viscosity @ 100°C



Base Number



FT-IR (Direct Trend)



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : JR0214567 **Received** : 24 May 2024
Lab Number : 06191487 **Tested** : 29 May 2024
Unique Number : 11048239 **Diagnosed** : 29 May 2024 - Angela Borella
Test Package : CONST (Additional Tests: FuelDilution, PercentFuel, TBN)

FITZGERALD EXCAVATING
 PO BOX 2168
 WINCHESTER, VA
 US 22604
 Contact: Service Manager

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)

T:
F: